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**SCS ENGINEERS**

## **Results of the 4<sup>th</sup> Quarter 2004 Groundwater Monitoring and Sampling Event**

**J.E. McCaffrey Company  
365 Todd Road  
Santa Rosa, California  
(Assessor's Parcel No. 134-102-024)  
(SCDHS-EHD Site #00001229, NCRWQCB Site #1TSO373, CUF Claim #6619)**

**File Number 01203335.00**

**Prepared by:**

**SCS Engineers  
3645 Westwind Boulevard  
Santa Rosa, California 95403**

**To:**

**Mr. Dale Radford  
Sonoma County Department of Health Services  
3273 Airway Drive, Suite D  
Santa Rosa, California 95403-2097**

**February 25, 2005**

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*Mr. Radford*  
*February 25, 2005*  
*Page ii*



### LIMITATIONS/DISCLAIMER

This report has been prepared for the J.E. McCaffrey Company with specific application to a Quarterly Monitoring event for the property located at 365 Todd Road, Santa Rosa, California. Field activities and sampling were conducted in accordance with the care and skill generally exercised by reputable professionals, under similar circumstances, in this or similar localities. No other warranty, either expressed or implied, is made as to the professional advice presented herein.

Changes in site use and conditions may occur due to variations in rainfall, temperature, water usage, or other factors. Additional information which was not available to the consultant at the time of this monitoring event or changes which may occur on the site or in the surrounding area may result in modification to the site that would impact the summary presented herein. This report is not a legal opinion.

We trust this report provides the information you require at this time and appreciate the opportunity to work with you on this project. If you require any additional information or have any questions, please do not hesitate to contact SCS at (707) 546-9461.

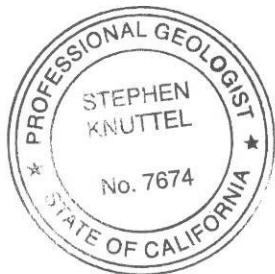
*LL*

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Kevin L. Coker REA 7887  
CA registration fees paid through 6/30/05

*2-25-05*

Date



*Stephen Knuttel*

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Stephen Knuttel PG 7674  
CA registration fees paid through 07/31/05

*25. FEB., 2005*

Date

## **Introduction**

SCS Engineers (SCS) is pleased to present the results of the 4<sup>th</sup> quarter 2004 groundwater monitoring and sampling event conducted at 365 Todd Road, Santa Rosa, California. A summary of historical site investigative activities is presented in previous reports (PNEG<sup>1</sup>, 1999b, 1999c, 2000c, 2001a, 2001e; SCS, 2004a, 2004b, 2005a, 2005b). The site is located as shown on the attached Site Location Map, Figure 1. General site features are shown on the attached Site Plan, Figure 2.

## **Groundwater Monitoring**

Depth to groundwater measurements were collected from the project monitoring wells on December 22, 2004. Depth to groundwater measurements in the shallow wells ranged from approximately 6.5 to 11 feet below ground surface (bgs). Depth to groundwater measurements in the deep wells ranged from approximately 10 to 19 feet below bgs. Depth to groundwater measurements were combined with the well casing elevations to calculate the groundwater flow direction and gradient. Casing and groundwater elevations are reported in feet relative to mean sea level. Depths to groundwater are expressed in feet. For the 4<sup>th</sup> Quarter 2004 monitoring event, the shallow groundwater flow direction was interpolated to be variable with a variable gradient, while the deep groundwater flow direction was interpolated to be southerly at a calculated gradient of 0.03. Historical and current groundwater elevation data are presented on Figures 2 and 2A and in Tables 1 and 1A.

## **Groundwater Sampling**

After depth to groundwater measurements were collected, the wells were checked for the presence of free product by subjective evidence and using an oil/water interface probe. No free product was reported for this monitoring event. Each well was then purged of approximately three wetted well casing volumes of groundwater, or at least 5 gallons, whichever was greater, or until it went dry, using a submersible pump. Temperature, pH, conductivity, turbidity, and dissolved oxygen were measured during purging to help demonstrate that fresh groundwater was entering the well casing for sampling. Each well was allowed to recover prior to sampling. Groundwater samples were collected using a separate disposable bailer for each well and were transferred into the appropriate containers supplied by the laboratory for analysis. Samples were labeled, stored under refrigerated conditions, and transported under Chain-of-Custody documentation to Analytical Sciences (AS) in Petaluma for chemical analysis. All samples were collected in accordance with Standard Soil and Water Sampling Procedures and QA/QC Protocol. Copies of AS' current certifications have been reviewed and are on file. Information obtained during sampling was recorded on groundwater field sampling forms and Well Purge Records were generated, copies of which

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<sup>1</sup> Pacific Northwest EnviroNet Group, Inc. (PNEG) became a part of SCS in July 2003.

are presented in Appendix A. Purge water generated during sampling is currently stored at the site in 55-gallon UN/DOT-approved drums, pending disposal.

### **Domestic Well Sampling**

Based on the Sonoma County Department of Health Services' (SCDHS) June 1, 2004 letter and subsequent conversations with SCS staff, the domestic well sampling schedule at the subject site and vicinity has been revised as follows: 300, 306, and 311 Todd Road will be sampled on an annual basis during high groundwater; 330 and 348 Todd Road will be sampled on a semi-annual basis during high and low groundwater, and 369 and 376 Todd will be sampled on a quarterly basis. The domestic well at 365 Todd Road was decommissioned in December 2004 and a report summarizing the decommissioning activities was prepared (SCS, 2005b).

On December 22, 2004 the domestic wells at 330 and 369 Todd Road were sampled. Domestic well analytical results are submitted under separate cover to the SCDHS and the respective property owners. Results of the domestic well sampling through December 2004 are summarized in Table 2. As of January 12, 2004, all residences/businesses with impacted domestic wells have been hooked up to the City of Santa Rosa Utility Waterline.

### **Laboratory Analysis**

The groundwater samples collected from both the monitoring and domestic wells on December 22, 2004 were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) and the five ether-based oxygenates by EPA Method 8260B.

### **Groundwater Analytical Results**

The analytical results for the project monitoring wells sampled on December 22, 2004 are presented in Table 3, and contoured on isoconcentration maps for MTBE, Figures 3 and 4. Further, current and historical analytical results are presented in Table 3, and plotted on time versus concentration diagrams, Diagrams A and B.

### **Discussion**

The groundwater analytical results from the December 22, 2004 sampling event are generally consistent with those from previous sampling events indicating an impact by MTBE to both the shallow and deep wells at the site (Figures 3 and 4). The extent of the deeper-impacted groundwater appears to be primarily concentrated in the vicinity of MW-18D (Figure 4). The extent of the shallow-impacted groundwater is more widespread than that of the deeper groundwater but appears to be generally assessed to the west and the east/southeast of the site

(Figure 3). As indicated on Diagrams A and B, the shallow groundwater impact beneath the site appears to be generally static while the deeper groundwater impact appears to be generally declining over time.

Based on the review of the Well Purge Record for MW-29D, it appears that approximately 1.5 feet of silt has accumulated at the bottom of the well casing as the total depth of the well measured in the field was 68.36 feet and the original depth of the well after it was installed was 70.0 feet. Additionally, the same issues may exist with respect to MW-31D which was measured in the field to be 70.77 feet deep and was originally constructed to be approximately 75.0 feet deep. During the next quarterly monitoring event at the site, SCS will attempt to remove the accumulated silt from the bottom of the well casings using a submersible pump combined with surging of the well.

### **Project Update**

Pursuant to a directive from the SCDHS (SCDHS, 2004), SCS has prepared a Feasibility Study/Corrective Action Plan (FS/CAP) for the site which was published and submitted on February 18, 2005.

### **Attachments File No. 01203335.00**

- Figure 1: Site Location Map
- Figure 2: Site Plan - Groundwater Flow Direction and Gradient, Shallow Wells, 12/22/04
- Figure 2A: Site Plan - Groundwater Flow Direction and Gradient, Deep Wells, 12/22/04
- Figure 3: Isoconcentration Map - MTBE in Shallow Wells for 12/22/04
- Figure 4: Isoconcentration Map - MTBE in Deep Wells for 12/22/04
- Key to Diagram and Tables
- Diagram A: MTBE & Groundwater Elevation vs Time (Shallow Wells)
- Diagram B: MTBE & Groundwater Elevation vs Time (Deep Wells)
- Table 1: Groundwater Flow Direction and Gradient – Shallow Wells
- Table 1A: Groundwater Flow Direction and Gradient – Deep Wells
- Table 2: Domestic Well Analytical Results
- Table 2A: Wellhead Treatment System Analytical Results
- Table 3: Groundwater Analytical Results
- Appendix A  
Well Purge Records, dated December 22, 2004
- Appendix B  
Analytical Sciences report #4122306, dated January 11, 2005

**List of References**  
**File No. 01203335.00**

- Harris & Lee Environmental Sciences, 1997. Monitoring Report, May 19.
- PNEG, 1999a. Interim Corrective Action Work Plan for 365 Todd Road, Santa Rosa, California, March 2.
- PNEG, 1999b. Underground Storage Tank Removal - 365 Todd Road, Santa Rosa, California, May 21.
- PNEG, 1999c. Report on Overexcavation of Soil and Pit Dewatering at 365 Todd Road, Santa Rosa, California, July 6.
- PNEG, 1999d. Work Plan for Additional Groundwater Investigation - 365 Todd Road, Santa Rosa, California, December 14.
- PNEG, 2000a. Feasibility Study - 365 Todd Road, Santa Rosa, California, May 1.
- PNEG, 2000b. Work Plan for Permanent Water Supply - Todd Road Area, Santa Rosa, California, July 12.
- PNEG, 2000c. Report of Additional Groundwater Investigation, Groundwater Monitoring Event, and Work Plan for Additional Investigation - 365 Todd Road, Santa Rosa, California, December 29.
- PNEG, 2001a. Report of Additional Groundwater Investigation, Groundwater Monitoring Event, and Work Plan for Additional Investigation - 365 Todd Road, Santa Rosa, California, January 16.
- PNEG, 2001b. Report of 4<sup>th</sup> Quarter 2000 Quarterly Monitoring and Sampling at 365 Todd Road, Santa Rosa, California, February 23.
- PNEG, 2001c. Report of 1<sup>st</sup> Quarter 2001 Quarterly Monitoring and Sampling at 365 Todd Road, Santa Rosa, California, May 1.
- PNEG, 2001d. Work Plan for Permanent Water Supply - Todd Road Area, Santa Rosa, California, July 12.
- PNEG, 2001e. Report on Additional Groundwater Investigation Plus Results of Monitoring and Domestic Well Sampling - 365 Todd Road, Santa Rosa, California, July 19.
- PNEG, 2001f. Results of the 3<sup>rd</sup> Quarter 2001 Groundwater Monitoring and Sampling and Domestic Well Sampling Event - 365 Todd Road, Santa Rosa, California, December 27.
- PNEG, 2002a. Results of the 4<sup>th</sup> Quarter 2001 Monitoring Well and Domestic Well Groundwater Monitoring and Sampling Event - 365 Todd Road, Santa Rosa, California, March 14.
- PNEG, 2002b. Work Plan for Additional Investigation - 365 Todd Road, Santa Rosa, California, April 18.
- PNEG, 2002c. Results of the 1<sup>st</sup> Quarter 2002 Monitoring Well and Domestic Well Groundwater Monitoring and Sampling Event - 365 Todd Road, Santa Rosa, California, May 9.
- PNEG, 2002d. Results of the 2<sup>nd</sup> Quarter 2002 Monitoring Well and Domestic Well Groundwater Monitoring and Sampling Event - 365 Todd Road, Santa Rosa, California, July 24.

- PNEG, 2002e. Results of the 3<sup>rd</sup> Quarter 2002 Monitoring Well and Domestic Well Groundwater Monitoring and Sampling Event - 365 Todd Road, Santa Rosa, California, October 7.
- PNEG, 2003a. Results of the 4<sup>th</sup> Quarter 2002 Monitoring Well and Domestic Well Groundwater Monitoring and Sampling Event - 365 Todd Road, Santa Rosa, California, January 17.
- PNEG, 2003b. Results of the 1<sup>st</sup> Quarter 2003 Monitoring Well and Domestic Well Groundwater Monitoring and Sampling Event - 365 Todd Road, Santa Rosa, California, April 29.
- SCDHS, 2004. Regulatory directive for FS/CAP from D. Radford to J. McCaffrey, October 27.
- SCS, 2003c. Results of the 2<sup>nd</sup> Quarter 2003 Monitoring Well and Domestic Well Groundwater Monitoring and Sampling Event - 365 Todd Road, Santa Rosa, California, July 31.
- SCS, 2004a. Report on the Results of Additional Subsurface Investigation – 365 Todd Road, Santa Rosa, California, January 16.
- SCS, 2004b. Site Conceptual Model – 365 Todd Road, Santa Rosa, California, May 19.
- SCS, 2004c. Results of the 3<sup>rd</sup> Quarter 2004 Monitoring Well and Domestic Well Groundwater Monitoring and Sampling Event - 365 Todd Road, Santa Rosa, California, September 30.
- SCS, 2005a. Monitoring Well Decommissioning – 365 Todd Road, Santa Rosa, California, January 13.
- SCS, 2005b. Feasibility Study/Corrective Action Plan – 365 Todd Road, Santa Rosa, California, February 18.

**Distribution List**  
**File No. 01203335.00**

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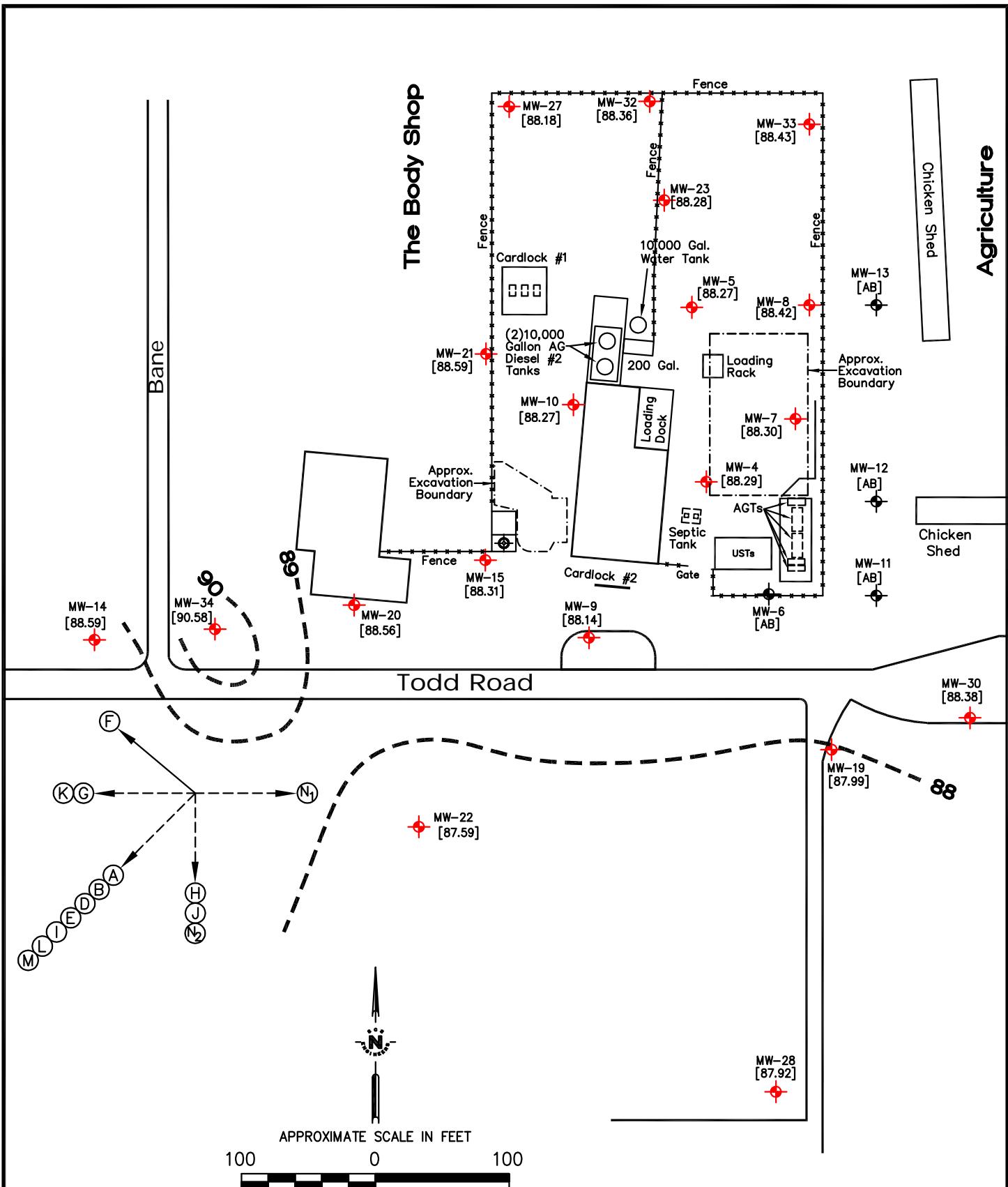
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## Site Location Map

J. E. McCaffrey Co.  
365 Todd Road  
Santa Rosa, California

FIGURE  
**1**

Drawn by: MRO	File Name: 8142.1_SiteLoc		Job Number: 01203335.00	Date: July 8, 2003
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## GROUNDWATER FLOW LEGEND

 MW-1 Shallow Monitoring Well  
[XX.XX] Groundwater Elevation

AB = Abandoned

+ water well

## NOTES:

Groundwater elevations are in feet above mean sea level (National Geodetic Vertical Datum, 1929).

MWs denoted in red used to determine flow direction and gradient.

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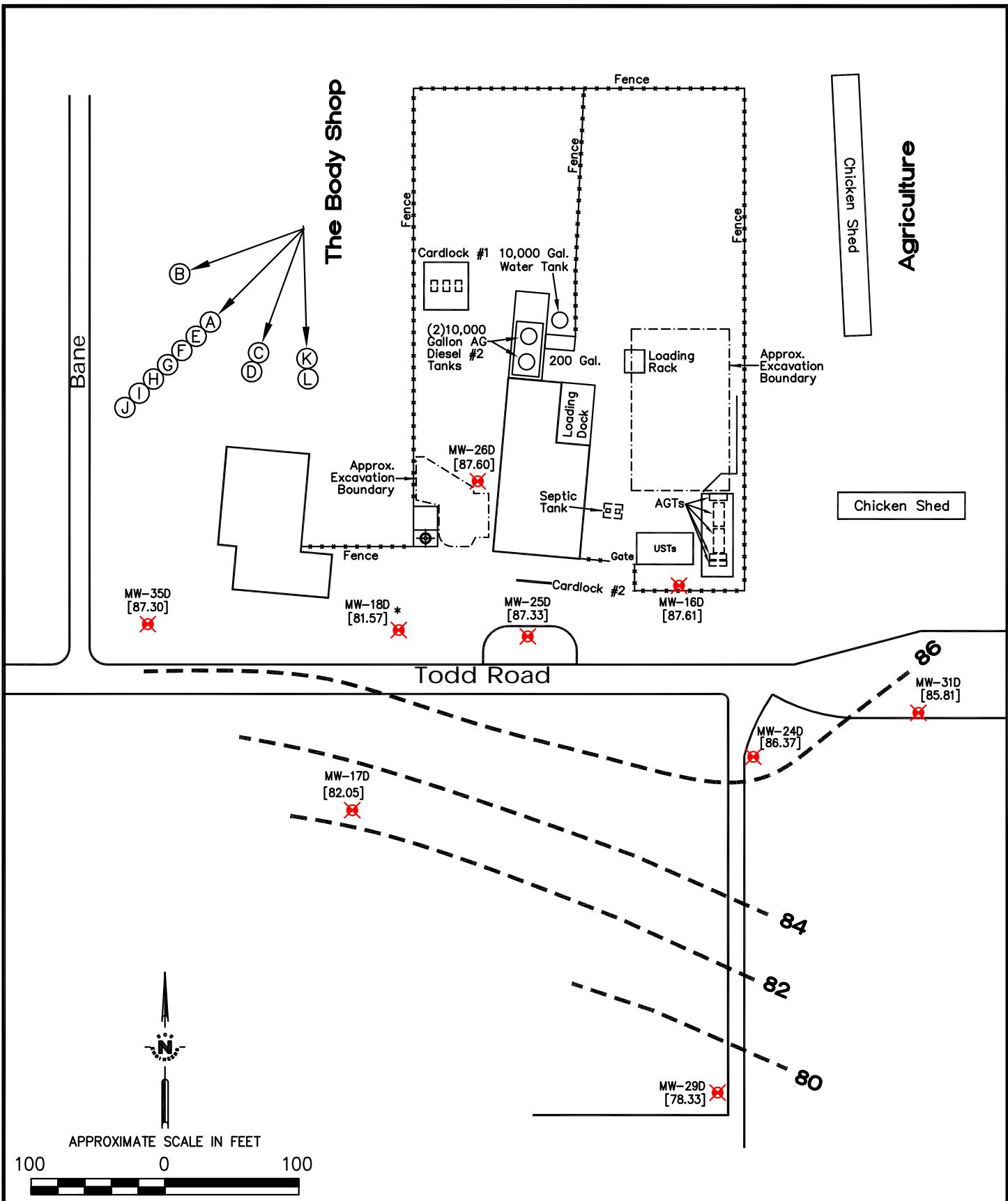
3645 WESTWIND BOULEVARD  
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**SHEET TITLE:** SITE PLAN  
**GROUNDWATER FLOW DIRECTION & GRADIENT, SHALLOW WELLS, 12/22/04**

**SCALE:**

PROJECT TITLE: J. E. MCCAFFREY CO.  
365 TODD ROAD  
SANTA ROSA, CALIFORNIA

FIGURE NO.:  
2  
SHEET 2 OF 2



## GROUNDWATER FLOW LEGEND

 MW-1 Deep Monitoring Well  
[XX.XX] Groundwater Elevation

## NOTES:

Groundwater elevations are in feet above mean sea level (National Geodetic Vertical Datum, 1929).

MWs denoted in red used to determine flow direction and gradient.

\* MW-18D not used to determine GW flow direction and gradient.



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PROJ. NO.: 3335.00 DWN. BY: A.I.H ACAD FILE: 3335.00-GW.d0-3393

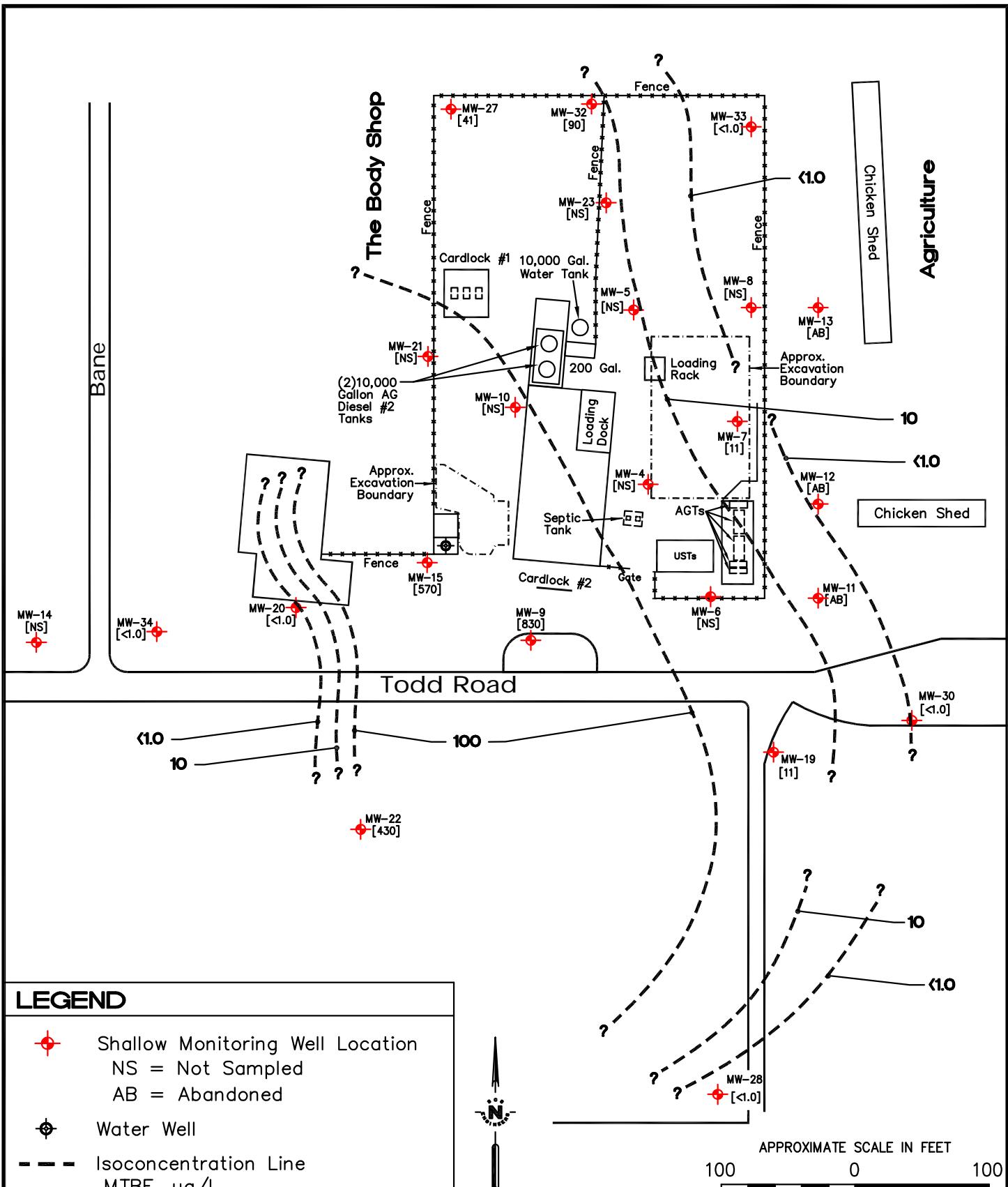
DATE: 2/8/05 CHK. BY: APP. BY: SK

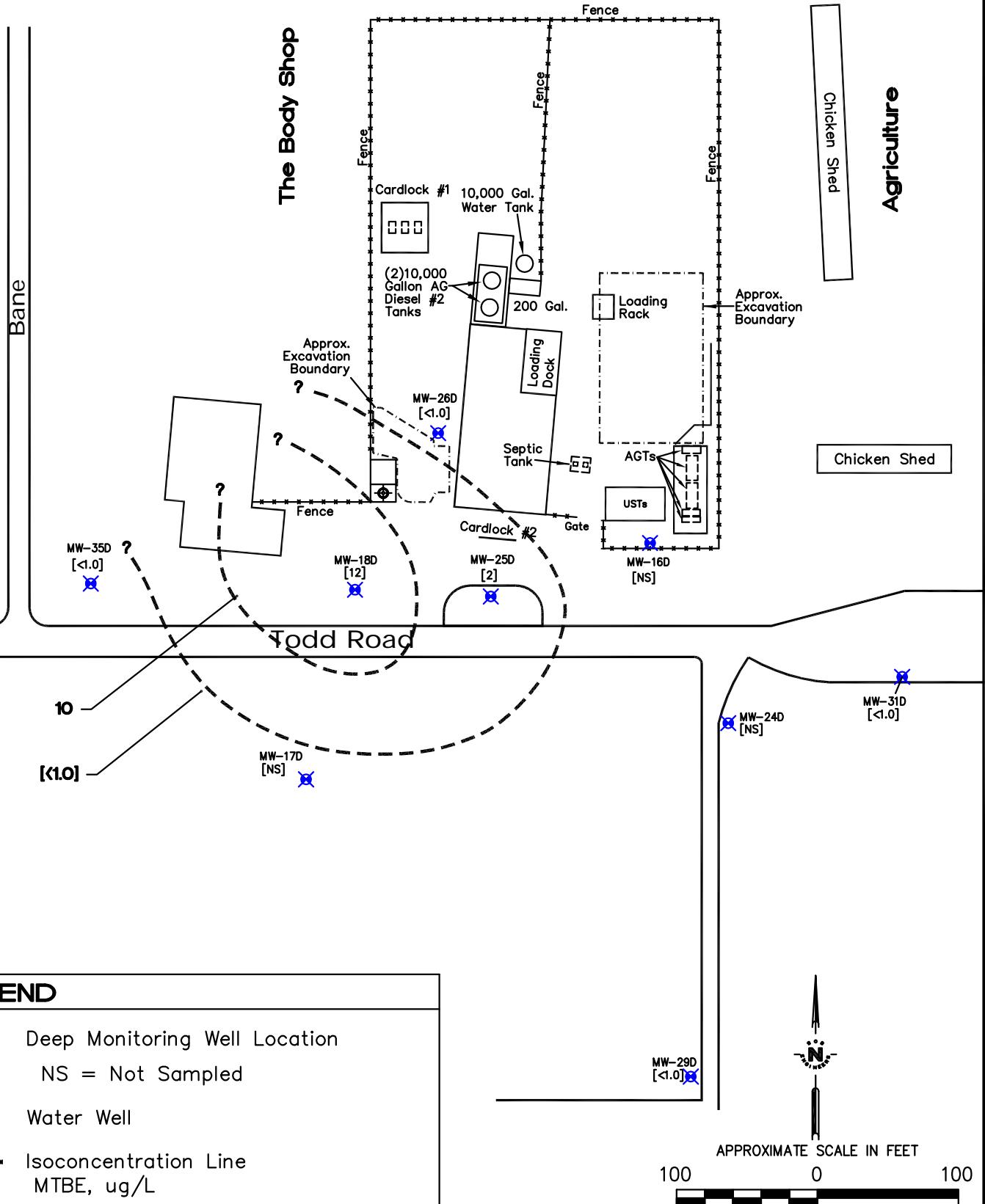
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**GROUNDWATER FLOW DIRECTION AND GRADIENT, DEEP WELLS, 12/22/04**

PROJECT TITLE: J. E. MCCAFFREY CO.  
365 TODD ROAD  
SANTA ROSA, CALIFORNIA

**SCALE:**

**FIGURE NO.:**  
**2A**  
**SHEET 2 OF 2**





## LEGEND

- ☒ Deep Monitoring Well Location
- NS = Not Sampled
- ⦶ Water Well
- - - Isoconcentration Line  
MTBE, ug/L

APPROXIMATE SCALE IN FEET  
100 0 100

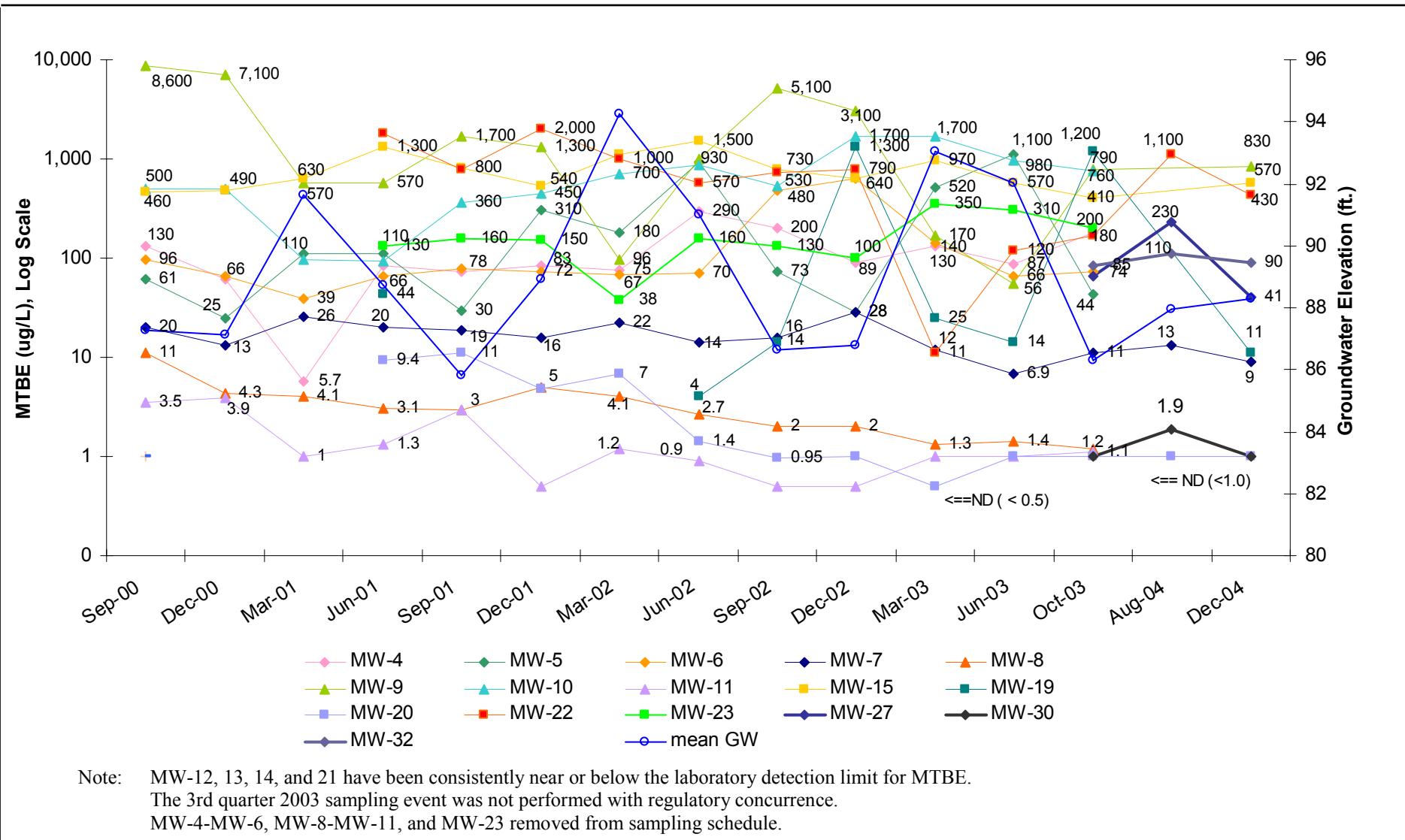


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DATE: 1/19/05 CHK. BY: APP. BY: SK

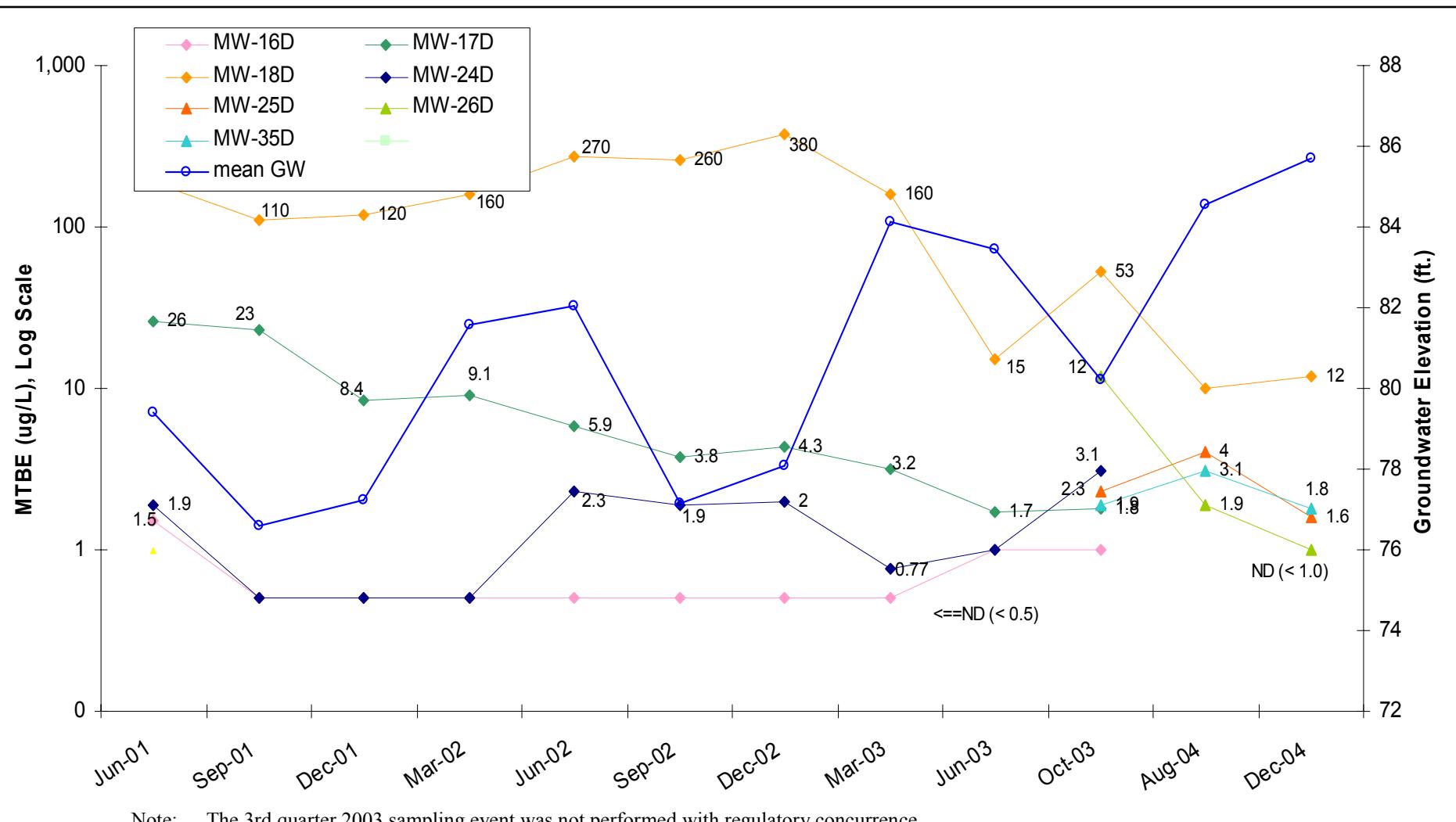
SHEET TITLE: ISOCONCENTRATION MAP MTBE IN DEEP WELLS FOR 12/22/04	SCALE: 1" = 100'
PROJECT TITLE: J. E. McCAFFREY CO. 365 TODD ROAD SANTA ROSA, CALIFORNIA	FIGURE NO.: 4

**Key To Diagrams and Tables**  
**365 Todd Road, Santa Rosa, California**

TPH-g	=	Total petroleum hydrocarbons in the gasoline range
TPH-d	=	Total petroleum hydrocarbons in the diesel range
TPH-mo	=	Total petroleum hydrocarbons in the motor oil range
TPH-k	=	Total petroleum hydrocarbons in the kerosene range
B	=	Benzene
T	=	Toluene
E	=	Ethylbenzene
X	=	Xylenes
MTBE	=	Methyl tertiary butyl ether
DIPE	=	Diisopropyl ether
ETBE	=	Ethyl-tert-butyl ether
TAME	=	Tert-amyl methyl ether
TBA	=	Tert-butyl alcohol
Other Oxys	=	DIPE, ETBE, TAME, TBA
Pb Scavs	=	1,2-dichloroethane (EDC), 1,2-dibromoethane (EDB)
FP	=	Free phase petroleum hydrocarbons
$\mu\text{g/L}$	=	Micrograms per liter
RDL	=	Report detection limit
ND	=	Not detected above the laboratory RDL
NA	=	Not analyzed
msl	=	Mean sea level



SCS ENGINEERS 3645 WESTWIND BOULEVARD SANTA ROSA, CA 95403 PH. (707) 546-9461 FAX (707) 544-5769			MTBE & Groundwater Elevation vs Time (Shallow Wells) 365 Todd Road Santa Rosa, California								DIAGRAM <b>A</b>	
Drawn by: MRO	File Name: 8142.1 MTBE-GW		Job Number: 01203335.00								Date: 1/12/05	



SCS ENGINEERS 3645 WESTWIND BOULEVARD SANTA ROSA, CA 95403 PH. (707) 546-9461 FAX (707) 544-5769		MTBE & Groundwater Elevation vs Time (Deep Wells) 365 Todd Road Santa Rosa, California				DIAGRAM <b>B</b>
Drawn by: MRO	File Name: 8142.1 MTBE-GW		Job Number: 01203335.00			Date: 01/12/05

**Table 1: Groundwater Flow Direction and Gradient - Shallow Wells**  
**365 Todd Road, Santa Rosa, California**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-4	09/05/00	99.04	11.62	87.42	South to Southwest i = 0.001
MW-5		98.98	11.50	87.48	
MW-6		97.83	10.48	87.35	
MW-7		98.52	11.10	87.42	
MW-8		98.99	11.57	87.42	
MW-9		97.78	10.83	86.95	
MW-10		98.84	11.65	87.19	
MW-11		98.42	11.14	87.28	
MW-12		97.76	10.49	87.27	
MW-13		97.64	10.20	87.44	
MW-14		98.69	11.71	86.98	
MW-15		97.71	10.71	87.00	
MW-4	12/26/00	99.04	11.92	87.12	South to Southwest i = 0.001
MW-5		98.98	11.85	87.13	
MW-6		97.83	10.76	87.07	
MW-7		98.52	11.42	87.10	
MW-8		98.99	11.83	87.16	
MW-9		97.78	10.99	86.79	
MW-10		98.84	11.94	87.90	
MW-11		98.42	11.40	87.02	
MW-12		97.76	10.69	87.07	
MW-13		97.64	10.45	87.19	
MW-14		98.69	11.71	86.98	
MW-15		97.71	10.88	86.83	
MW-4	03/20/01	99.04	7.56	91.48	Variable i = 0.004
MW-5		98.98	7.62	91.36	
MW-6		97.83	6.21	91.62	
MW-7		98.52	7.01	91.51	
MW-8		98.99	7.31	91.68	
MW-9		97.78	5.98	91.80	
MW-10		98.84	7.40	91.44	
MW-11		98.42	6.47	91.95	
MW-12		97.76	5.79	91.97	
MW-13		97.64	5.90	91.74	
MW-14		98.69	7.26	91.43	
MW-15		97.71	6.19	91.52	

**Table 1: Groundwater Flow Direction and Gradient - Shallow Wells**  
**365 Todd Road, Santa Rosa, California**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-4	06/05/01	99.04	10.15	88.89	South-Southwest i = 0.003
MW-5		98.98	10.10	88.88	
MW-6		97.83	9.00	88.83	
MW-7		98.52	9.63	88.89	
MW-8		98.99	10.04	88.95	
MW-9		97.78	9.20	88.58	
MW-10		98.84	10.10	88.74	
MW-11		98.42	9.58	88.84	
MW-12		97.76	8.85	88.91	
MW-13		97.64	8.62	89.02	
MW-14		98.69	10.55	88.14	
MW-15		97.71	9.00	88.71	
MW-19		97.93	9.45	88.48	
MW-20		97.76	9.01	88.75	
MW-21		98.28	9.52	88.76	
MW-22	09/05/01	96.97	8.82	88.15	Southwest i = 0.005
MW-23		98.58	9.65	88.93	
MW-4		99.04	12.90	86.14	
MW-5		98.98	12.77	86.21	
MW-6		97.83	11.77	86.06	
MW-7		98.52	12.40	86.12	
MW-8		98.99	12.86	86.13	
MW-9		97.78	12.15	85.63	
MW-10		98.84	13.01	85.83	
MW-11		98.42	12.47	85.95	
MW-12		97.76	11.77	85.99	
MW-13		97.64	11.41	86.23	
MW-14		98.69	13.85	84.84	
MW-15		97.71	12.06	85.65	
MW-19		97.93	Well inaccessible		
MW-20		97.76	12.00	85.76	
MW-21		98.28	12.75	85.53	
MW-22		96.97	11.92	85.05	
MW-23		98.58	12.26	86.32	

**Table 1: Groundwater Flow Direction and Gradient - Shallow Wells**  
**365 Todd Road, Santa Rosa, California**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)	
MW-4	12/05/01	99.04	10.61	88.43	N55°W i = 0.01	
MW-5		98.98	10.73	88.25		
MW-6		97.83	9.20	88.63		
MW-7		98.52	10.00	88.52		
MW-8		98.99	10.24	88.75		
MW-9		97.78	8.77	89.01		
MW-10		98.84	10.23	88.61		
MW-11		98.42	9.32	89.10		
MW-12		97.76	8.61	89.15		
MW-13		97.64	8.81	88.83		
MW-14		98.69	9.81	88.88		
MW-15		97.71	8.59	89.12		
MW-19		97.93	Well inaccessible			
MW-20		97.76	8.26	89.50		
MW-21		98.28	7.81	90.47		
MW-22		96.97	7.95	89.02		
MW-23		98.58	10.31	88.27		
MW-4	03/06/02	99.04	4.75	94.29	Westerly i = 0.001	
MW-5		98.98	4.71	94.27		
MW-6		97.83	3.51	94.32		
MW-7		98.52	4.25	94.27		
MW-8		98.99	4.65	94.34		
MW-9		97.78	3.49	94.29		
MW-10		98.84	4.70	94.14		
MW-11		98.42	4.05	94.37		
MW-12		97.76	3.36	94.40		
MW-13		97.64	3.23	94.41		
MW-14		98.69	5.08	93.61		
MW-15		97.71	3.49	94.22		
MW-19		97.93	Well inaccessible			
MW-20		97.76	3.73	94.03		
MW-21		98.28	3.25	95.03		
MW-22		96.97	2.92	94.05		
MW-23		98.58	4.30	94.28		

**Table 1: Groundwater Flow Direction and Gradient - Shallow Wells**  
**365 Todd Road, Santa Rosa, California**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-4	06/05/02	99.04	7.97	91.07	Southerly i = 0.008
MW-5		98.98	7.91	91.07	
MW-6		97.83	6.79	91.04	
MW-7		98.52	7.46	91.06	
MW-8		98.99	7.87	91.12	
MW-9		97.78	6.96	90.82	
MW-10		98.84	7.87	90.97	
MW-11		98.42	7.37	91.05	
MW-12		97.76	6.67	91.09	
MW-13		97.64	6.47	91.17	
MW-14		98.69	8.02	90.67	
MW-15		97.71	6.65	91.06	
MW-19		97.93	7.20	90.73	
MW-20		97.76	6.04	91.72	
MW-21		98.28	7.20	91.08	
MW-22		96.97	6.57	90.40	
MW-23		98.58	7.49	91.09	
MW-4	09/11/02	99.04	12.29	86.75	S to SW i = 0.003
MW-5		98.98	12.16	86.82	
MW-6		97.83	11.15	86.68	
MW-7		98.52	11.77	86.75	
MW-8		98.99	12.20	86.79	
MW-9		97.78	11.51	86.27	
MW-10		98.84	12.40	86.44	
MW-11		98.42	11.80	86.62	
MW-12		97.76	11.10	86.66	
MW-13		97.64	10.76	86.88	
MW-14		98.69	13.24	85.45	
MW-15		97.71	11.11	86.60	
MW-19		97.93	11.76	86.17	
MW-20		97.76	8.48	89.28	
MW-21		98.28	12.25	86.03	
MW-22		96.97	11.29	85.68	
MW-23		98.58	11.66	86.92	

**Table 1: Groundwater Flow Direction and Gradient - Shallow Wells**  
**365 Todd Road, Santa Rosa, California**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-4	12/10/02	99.04	12.63	86.41	Southerly i = 0.002
MW-5		98.98	12.58	86.40	
MW-6		97.83	11.41	86.42	
MW-7		98.52	12.11	86.41	
MW-8		98.99	12.56	86.43	
MW-9		97.78	11.28	86.50	
MW-10		98.84	12.12	86.72	
MW-11		98.42	11.98	86.44	
MW-12		97.76	11.32	86.44	
MW-13		97.64	11.13	86.51	
MW-14		98.69	12.30	86.39	
MW-15		97.71	11.05	86.66	
MW-19		97.93	11.91	86.02	
MW-20		97.76	9.37	88.39	
MW-21		98.28	7.83	90.45	
MW-22	03/11/03	96.97	10.95	86.02	Westerly i = 0.002
MW-23		98.58	12.15	86.43	
MW-4		99.04	5.97	93.07	
MW-5		98.98	5.97	93.01	
MW-6		97.83	4.70	93.13	
MW-7		98.52	5.44	93.08	
MW-8		98.99	5.82	93.17	
MW-9		97.78	4.70	93.08	
MW-10		98.84	5.97	92.87	
MW-11		98.42	5.20	93.22	
MW-12		97.76	4.50	93.26	
MW-13		97.64	4.41	93.23	
MW-14		98.69	6.16	92.53	
MW-15		97.71	4.74	92.97	
MW-19		97.93	4.82	93.11	
MW-20		97.76	4.36	93.40	
MW-21		98.28	5.83	92.45	
MW-22		96.97	3.99	92.98	
MW-23		98.58	5.57	93.01	

**Table 1: Groundwater Flow Direction and Gradient - Shallow Wells**  
**365 Todd Road, Santa Rosa, California**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-4	06/11/03	99.04	6.89	92.15	Southwesterly i = 0.001
MW-5		98.98	6.85	92.13	
MW-6		97.83	5.70	92.13	
MW-7		98.52	6.32	92.20	
MW-8		98.99	6.77	92.22	
MW-9		97.78	5.91	91.87	
MW-10		98.84	6.86	91.98	
MW-11		98.42	6.27	92.15	
MW-12		97.76	5.55	92.21	
MW-13		97.64	5.37	92.27	
MW-14		98.69	7.20	91.49	
MW-15		97.71	5.68	92.03	
MW-19		97.93	6.08	91.85	
MW-20		97.76	5.07	92.69	
MW-21		98.28	6.58	91.70	
MW-22		96.97	5.47	91.50	
MW-23		98.58	6.42	92.16	
MW-4	10/29/03	99.04	12.44	86.60	Southwesterly i = 0.002
MW-5		98.98	12.34	86.64	
MW-6		97.83	11.30	86.53	
MW-7		98.52	11.93	86.59	
MW-8		98.99	12.35	86.64	
MW-9		97.78	11.70	86.08	
MW-10		98.84	12.53	86.31	
MW-11		98.42	11.95	86.47	
MW-12		97.76	11.27	86.49	
MW-13		97.64	10.93	86.71	
MW-14		98.69	13.34	85.35	
MW-15		97.71	11.55	86.16	
MW-19		97.93	11.90	86.03	
MW-20		97.76	11.24	86.52	
MW-21		98.28	12.22	86.06	
MW-22		96.97	11.45	85.52	
MW-23		98.58	11.83	86.75	
MW-27		97.83	10.90	86.93	
MW-28		96.67	10.78	85.89	
MW-30		98.20	11.89	86.31	
MW-32		98.04	11.24	86.80	
MW-33		99.63	12.85	86.78	
MW-34		96.86	11.18	85.68	

**Table 1: Groundwater Flow Direction and Gradient - Shallow Wells**  
**365 Todd Road, Santa Rosa, California**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-7	08/23/04	98.52	11.11	87.41	Southerly i = 0.03
MW-20		97.76	6.47	91.29	
MW-22		96.97	10.48	86.49	
MW-27		97.83	10.07	87.76	
MW-28		96.67	25.00	71.67	
MW-30		98.20	11.05	87.15	
MW-32		98.04	10.40	87.64	
MW-33		99.63	12.01	87.62	
MW-34		96.86	5.96	90.90	
MW-4	12/22/04	99.04	10.75	88.29	Variable Variable
MW-5		98.98	10.71	88.27	
MW-7		98.52	10.22	88.30	
MW-8		98.99	10.57	88.42	
MW-9		97.78	9.64	88.14	
MW-10		98.84	10.57	88.27	
MW-14		98.69	10.10	88.59	
MW-15		97.71	9.40	88.31	
MW-19		97.93	9.94	87.99	
MW-20		97.76	9.20	88.56	
MW-21		98.28	9.69	88.59	
MW-22		96.97	9.38	87.59	
MW-23		98.58	10.30	88.28	
MW-27		97.83	9.65	88.18	
MW-28		96.67	8.75	87.92	
MW-30		98.20	9.82	88.38	
MW-32		98.04	9.68	88.36	
MW-33		99.63	11.20	88.43	
MW-34		96.86	6.28	90.58	

Note: MW-11, MW-12, and MW-13 were abandoned on December 1, 2004.

**Table 1A: Groundwater Flow Direction and Gradient - Deep Wells**  
**365 Todd Road, Santa Rosa, California**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-16D	06/05/01	97.89	10.23	87.66	Southwest i = 0.08
MW-17D		97.00	32.14	64.86	
MW-18D		97.48	18.65	78.83	
MW-15D* ( MW-24D)		97.77	11.47	86.30	
MW-16D	09/05/01	97.89	13.55	84.34	S65°W i = 0.06
MW-17D		97.00	25.73	71.27	
MW-18D		97.48	23.36	74.12	
MW-24D		97.77	Well inaccessible		
MW-16D	12/05/01	97.89	10.10	87.79	S15°W i = 0.15
MW-17D		97.00	31.21	65.79	
MW-18D		97.48	19.41	78.07	
MW-24D		97.77	Well inaccessible		
MW-16D	03/06/02	97.89	4.92	92.97	S15°W i = 0.2
MW-17D		97.00	29.71	67.29	
MW-18D		97.48	13.03	84.45	
MW-24D		97.77	Well inaccessible		
MW-16D	06/05/02	97.89	8.00	89.89	Southwest i = 0.07
MW-17D		97.00	28.75	68.25	
MW-18D		97.48	16.17	81.31	
MW-24D		97.77	9.11	88.66	
MW-16D	09/11/02	97.89	13.03	84.86	Southwest i = 0.06
MW-17D		97.00	31.23	65.77	
MW-18D		97.48	22.98	74.50	
MW-24D		97.77	14.30	83.47	
MW-16D	12/10/02	97.89	12.60	85.29	Southwest i = 0.06
MW-17D		97.00	31.28	65.72	
MW-18D		97.48	19.92	77.56	
MW-24D		97.77	14.07	83.70	
MW-16D	03/11/03	97.89	6.00	91.89	Southwest i = 0.11
MW-17D		97.00	27.03	69.97	
MW-18D		97.48	13.93	83.55	
MW-24D		97.77	6.65	91.12	
MW-16D	06/11/03	97.89	7.02	90.87	Southwesterly i = 0.06
MW-17D		97.00	26.16	70.84	
MW-18D		97.48	15.33	82.15	
MW-24D		97.77	7.92	89.85	

**Table 1A: Groundwater Flow Direction and Gradient - Deep Wells**  
**365 Todd Road, Santa Rosa, California**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-16D	10/29/03	97.89	12.85	85.04	Southwesterly i = 0.1
MW-17D		97.00	34.65	62.35	
MW-18D		97.48	21.75	75.73	
MW-24D		97.77	14.30	83.47	
MW-25D		98.30	13.50	84.80	
MW-26D		98.67	13.70	84.97	
MW-29D		97.54	19.80	77.74	
MW-31D		98.32	16.67	81.65	
MW-35D		97.20	13.42	83.78	
MW-25D	08/23/04	98.30	15.40	82.90	Southerly i = 0.02
MW-26D		98.67	12.12	86.55	
MW-29D		97.54	20.06	77.48	
MW-31D		98.32	15.71	82.61	
MW-35D		97.20	10.98	86.22	
MW-16D	12/22/04	97.89	10.28	87.61	Southerly i = 0.03
MW-17D		97.00	14.95	82.05	
MW-18D		97.48	15.91	81.57	
MW-24D		97.77	11.40	86.37	
MW-25D		98.30	10.97	87.33	
MW-26D		98.67	11.07	87.60	
MW-29D		97.54	19.21	78.33	
MW-31D		98.32	12.51	85.81	
MW-35D		97.20	9.90	87.30	

\*

The first well drilled during the most recent drilling program was designated as MW-15D. MW-15 already existed. MW-15D was redesignated as MW-24D.

**Table 2: Domestic Well Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	Other Oxys
		ug/L							
DW-300 (300 Todd)	03/23/00	NA	NA	NA	NA	NA	NA	ND	ND
	04/24/00	ND	NA	ND	ND	ND	ND	ND	ND
	05/24/00	ND	NA	ND	ND	ND	ND	ND	NA
	06/30/00	NA	NA	NA	NA	NA	NA	ND	NA
	08/21/00	NA	NA	NA	NA	NA	NA	ND	NA
	09/19/00	NA	NA	NA	NA	NA	NA	ND	NA
	10/27/00	NA	NA	NA	NA	NA	NA	ND	NA
	01/02/01	NA	NA	NA	NA	NA	NA	ND	NA
	03/20/01	NA	NA	NA	NA	NA	NA	ND	NA
	05/18/01	NA	NA	NA	NA	NA	NA	ND	ND
	06/05/01	NA	NA	NA	NA	NA	NA	ND	ND
	09/06/01	NA	NA	NA	NA	NA	NA	ND	ND
	12/07/01	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	03/08/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	06/12/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	09/10/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	12/11/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	03/13/03	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10

Note: All domestic wells changed to quarterly sampling program pursuant to regulatory directive effective August 28, 2001

**Table 2: Domestic Well Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	Other Oxys
		ug/L							
DW-306 (306 Todd)	02/14/00	ND	ND	ND	ND	ND	ND	ND	NA
	03/23/00	NA	NA	NA	NA	NA	NA	1.1	ND
	04/12/00	NA	NA	NA	NA	NA	NA	0.62	ND
	05/24/00	NA	NA	NA	NA	NA	NA	ND	NA
	06/30/00	NA	NA	NA	NA	NA	NA	ND	NA
	08/11/00	NA	NA	NA	NA	NA	NA	ND	NA
	08/21/00	NA	NA	NA	NA	NA	NA	0.78	NA
	09/19/00	NA	NA	NA	NA	NA	NA	1.1	NA
	10/27/00	NA	NA	NA	NA	NA	NA	ND	NA
	01/02/01	NA	NA	NA	NA	NA	NA	ND	NA
	03/20/01	NA	NA	NA	NA	NA	NA	1.3	ND
	12/07/01	NA	NA	NA	NA	NA	NA	1.1	<0.5 to <10
	03/08/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	06/12/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	09/10/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	12/12/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	03/13/03	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	06/13/03	NA	NA	NA	NA	NA	NA	<1.0	<1.0 to <25
	10/22/03*	NA	NA	NA	NA	NA	NA	<1.0	<1.0 to <25

Note: All domestic wells changed to quarterly sampling program pursuant to regulatory directive effective August 28, 2001.

\* Sample contained 4.5 µg/L tetrahydrofuran (a common solvent used to glue PVC pipe).

**Table 2: Domestic Well Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	Other Oxys
		ug/L							
DW-311 (311 Todd)	02/11/00	ND	ND	ND	ND	ND	ND	ND	ND
	03/23/00	NA	NA	NA	NA	NA	NA	ND	ND
	05/24/00	ND	NA	ND	ND	ND	ND	ND	NA
	06/30/00	ND	NA	ND	ND	ND	ND	ND	NA
	07/31/00	NA	NA	NA	NA	NA	NA	ND	NA
	08/21/00	NA	NA	NA	NA	NA	NA	ND	NA
	09/19/00	NA	NA	NA	NA	NA	NA	ND	NA
	10/27/00	NA	NA	NA	NA	NA	NA	ND	NA
	01/02/01	NA	NA	NA	NA	NA	NA	ND	NA
	03/20/01	NA	NA	NA	NA	NA	NA	ND	NA
	05/18/01	NA	NA	NA	NA	NA	NA	ND	ND
	06/05/01	NA	NA	NA	NA	NA	NA	ND	ND
	09/06/01	NA	NA	NA	NA	NA	NA	ND	ND
	12/05/01	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	03/08/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	06/12/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	09/10/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	12/10/02	NA	NA	NA	NA	NA	NA	0.52	<0.5 to <10
	12/30/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	03/11/03	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10

Note: All domestic wells changed to quarterly sampling program pursuant to regulatory directive effective August 28, 2001.

\* Sample contained 4.5 µg/L tetrahydrofuran (a common solvent used to glue PVC pipe).

**Table 2: Domestic Well Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	Other Oxys
		ug/L							
HD-311* (311 Todd)	02/11/00	ND	ND	ND	ND	ND	ND	ND*	ND
	03/23/00	ND	ND	ND	ND	ND	ND	ND*	ND
	05/24/00	ND	NA	ND	ND	ND	ND	ND	NA
	06/30/00	ND	NA	ND	ND	ND	ND	ND	NA
	07/31/00	NA	NA	NA	NA	NA	NA	ND	NA
	08/21/00	NA	NA	NA	NA	NA	NA	ND	NA
	09/19/00	NA	NA	NA	NA	NA	NA	ND	NA
	10/27/00	NA	NA	NA	NA	NA	NA	ND	NA
	01/02/01	NA	NA	NA	NA	NA	NA	ND	NA
	03/20/01	NA	NA	NA	NA	NA	NA	1.3	1.1 DIPE
	05/18/01	NA	NA	NA	NA	NA	NA	ND	ND
	06/05/01	NA	NA	NA	NA	NA	NA	ND	ND
	09/06/01	NA	NA	NA	NA	NA	NA	ND	ND
	12/05/01	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	03/08/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	06/12/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	09/10/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	12/10/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	12/30/02	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
	03/11/03	NA	NA	NA	NA	NA	NA	<0.5	<0.5 to <10
DW-330 (330 Todd)	02/11/00	ND	ND	ND	ND	ND	ND	76	ND
	06/12/02	NA	NA	NA	NA	NA	NA	1.1	<0.5 to <10
	09/10/02	NA	NA	NA	NA	NA	NA	17	<0.5 to <10
	12/10/02	NA	NA	NA	NA	NA	NA	22	0.74 TAME
	03/13/03	NA	NA	NA	NA	NA	NA	4.4	<0.5 to <10
	06/13/03	NA	NA	NA	NA	NA	NA	1.1	<1.0 to <25
	10/22/03	NA	NA	NA	NA	NA	NA	16	<1.0 to <25
	01/11/05	NA	NA	ND	ND	ND	ND	23	<1.0 to <25

Note: All domestic wells changed to quarterly sampling program pursuant to regulatory directive effective August 28, 2001.

\* Also identified as, 311 Todd WSW and as GW-311.

**Table 2: Domestic Well Analytical Results  
365 Todd Road, Santa Rosa, California**

**Table 2A: Wellhead Treatment System Sample Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	BTEX	MTBE	Other Oxy's
		ug/L				
DW-369 (INF) (369 Todd Inflow)	10/27/00	NA	NA	NA	630	NA
	12/26/00	ND	ND	ND	960	ND
	03/20/01	NA	NA	NA	650	ND
	06/05/01	NA	NA	NA	460	1.0 TAME
	09/05/01	NA	NA	NA	580	1.4 TAME
	12/07/01	NA	NA	NA	350	1.2 TAME
	03/08/02	NA	NA	NA	480	1.5 TAME
	06/12/02	NA	NA	NA	510	<50 to <1,000*
	09/10/02	NA	NA	NA	400	0.74 TAME
	12/11/02	NA	NA	NA	330	0.82 TAME
	03/13/03	NA	NA	NA	260	<10 to <200
	06/13/03	NA	NA	NA	260	<1.0 to <25
	10/22/03	NA	NA	NA	140	<1.0 to <25
DW-369©-1 (369 Todd canister-1)	10/27/00	NA	NA	NA	ND	NA
	12/26/00	ND	ND	ND	ND	NA
	03/20/01	NA	NA	NA	ND	ND
	06/05/01	NA	NA	NA	ND	ND
	09/05/01	NA	NA	NA	<0.5	ND
	12/07/01	NA	NA	NA	<0.5	<0.5 to <10
	03/08/02	NA	NA	NA	4.4	<0.5 to <10
	06/12/02	NA	NA	NA	74	<5.0 to <100
	09/10/02	NA	NA	NA	140	<0.5 to <10
	12/11/02	NA	NA	NA	210	<0.5 to <10
	03/13/03	NA	NA	NA	<0.5	<0.5 to <10
DW-369 (EFF) (369 Todd Effluent)	10/27/00	NA	NA	NA	ND	NA
	12/26/00	ND	ND	ND	ND	NA
	03/20/01	NA	NA	NA	ND	ND
	06/05/01	NA	NA	NA	ND	ND
	09/05/01	NA	NA	NA	<0.5	ND
	12/07/01	NA	NA	NA	<0.5	<0.5 to <10
	03/08/02	NA	NA	NA	<0.5	<0.5 to <10
	06/12/02	NA	NA	NA	<0.5	<0.5 to <10
	09/10/02	NA	NA	NA	<0.5	<0.5 to <10
	12/11/02	NA	NA	NA	<0.5	<0.5 to <10
	03/13/03	NA	NA	NA	<0.5	<0.5 to <10
	06/13/03	NA	NA	NA	<1.0	<1.0 to <25
	10/22/03	NA	NA	NA	<1.0	<1.0 to <25

\* According to the laboratory, the reporting limits were raised due to matrix interference.

Note: All domestic wells changed to quarterly sampling program pursuant to regulatory directive effective August 28, 2001.

**Table 3: Groundwater Groundwater Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA
		ug/L										
MW-4	09/05/00	<50	<50	<0.3	<0.3	<0.5	<0.5	130	<0.5	<0.5	0.72	12
	12/26/00	<50	<50	<0.3	<0.3	<0.5	<0.5	61	<0.5	<0.5	<0.5	<10
	03/20/01	<50	<50	<0.3	<0.3	<0.5	<0.5	5.7	<0.5	<0.5	<0.5	<10
	06/06/01	ND	ND	ND	ND	ND	ND	83	ND	ND	ND	ND
	09/06/01	<50	<57	<0.3	<0.3	<0.5	<0.5	74	<0.5	<0.5	<0.5	<10
	12/07/01	<50	<50	<0.3	<0.3	<0.5	<0.5	83	<0.5	<0.5	<0.5	<10
	03/08/02	<50	<50	<0.3	<0.3	<0.5	<0.5	75	<0.5	<0.5	<0.5	<10
	06/06/02	<50	<50	<0.3	<0.3	<0.5	<0.5	290	<0.5	<0.5	17	83
	09/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	200	<0.5	<0.5	12	<10
	12/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	89	<0.5	<0.5	4.1	<10
	03/12/03	<50	<50	<1.5	<1.5	<2.5	<2.5	130	<2.5	<2.5	7.1	<50
	06/12/03	140*	<50	1.1	16	4.1	23.6	87	<1.0	<1.0	3.5	<25
MW-5	10/31/03	190*	<50	<5.0	<5.0	<5.0	<5.0	180	<5.0	<5.0	7.6	<100
	09/05/00	<50	<50	<1.5	<1.5	<2.5	<2.5	61	<2.5	<2.5	<2.5	<25
	12/26/00	<50	<50	<0.3	<0.3	<0.5	<0.5	25	<0.5	<0.5	<0.5	<10
	03/20/01	490	82	65	<1.5	10	<2.5	110	<2.5	<2.5	<2.5	<25
	06/06/01	77	ND	ND	ND	ND	ND	110	ND	ND	ND	ND
	09/06/01	<50	<50	<0.3	<0.3	<0.5	<0.5	30	<0.5	<0.5	<0.5	<10
	12/07/01	2,100	240	46	1.5	130	120	310	<0.5	<0.5	1.2	300
	03/08/02	230	150	12	<0.3	2.4	<0.5	180	<0.5	<0.5	12	49
	06/06/02	310	<50	<0.3	<0.3	<0.5	<0.5	930	<0.5	<0.5	51	140
	09/11/02	62	<50	<0.3	<0.3	<0.5	<0.5	73	<0.5	<0.5	4.2	<10
	12/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	28	<0.5	<0.5	0.96	<10
	03/12/03	140	130	<3.0	<3.0	<5.0	<5.0	520	<5.0	<5.0	34	360
	06/12/03	1,100*	100	<50	<50	<50	<50	1,100	<50	<50	<50	<1,000
	10/31/03	<50	<50	<5.0	<5.0	<5.0	<5.0	44	<5.0	<5.0	<5.0	<100

\* Result consists primarily of MTBE and/or TBA.

\*\* Results in the gasoline organics range are primarily due to a single unknown peak.

**Table 3: Groundwater Groundwater Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA
		ug/L										
MW-6	09/05/00	<50	<50	<0.3	<0.3	<0.5	<0.5	96	<5.0	<5.0	<5.0	<50
	12/26/00	<50	<50	<0.3	<0.3	<0.5	<0.5	66	<0.5	,0.5	<0.5	<10
	03/20/01	<50	<50	<0.3	<0.3	<0.5	<0.5	39	<0.5	,0.5	<0.5	<10
	06/06/01	ND	ND	ND	ND	ND	ND	66	ND	ND	ND	ND
	09/05/01	<50	<50	<0.3	<0.3	<0.5	<0.5	78	<0.5	<0.5	<0.5	<10
	12/07/01	<50	<50	<0.3	<0.3	<0.5	<0.5	72	<0.5	<0.5	<0.5	18
	03/07/02	<50	<50	<0.3	<0.3	<0.5	<0.5	67	<0.5	<0.5	0.51	<10
	06/06/02	<50	120	<0.3	<0.3	<0.5	<0.5	70	<0.5	<0.5	1.1	13
	09/11/02	56**	<50	<0.3	<0.3	<0.5	<0.5	480	<0.5	<0.5	32	14
	12/11/02	67**	<50	<0.3	<0.3	<0.5	<0.5	640	<0.5	<0.5	37	49
	03/12/03	<50	<50	<1.5	<1.5	<2.5	<2.5	140	<2.5	<2.5	14	<50
	06/12/03	70*	<50	<1.0	<1.0	<1.0	<1.0	66	<1.0	<1.0	3.7	<25
	10/29/03	700*	<50	<1.0	<1.0	<1.0	<1.0	74	<1.0	<1.0	1.3	620
MW-7	09/05/00	<50	<50	<0.3	<0.3	<0.5	<0.5	20	<0.5	<0.5	11	<5.0
	12/26/00	<50	<50	<0.3	<0.3	<0.5	<0.5	13	<0.5	<0.5	<0.5	<10
	03/20/01	<50	<50	<0.3	<0.3	<0.5	<0.5	26	<0.5	<0.5	<0.5	<10
	06/06/01	ND	ND	ND	ND	ND	ND	20	ND	ND	ND	ND
	09/06/01	<50	<50	<0.3	<0.3	<0.5	<0.5	19	<0.5	<0.5	<0.5	<10
	12/07/01	<50	<50	<0.3	<0.3	<0.5	<0.5	16	<0.5	<0.5	<0.5	<10
	03/07/02	<50	200	<0.3	<0.3	<0.5	<0.5	22	<0.5	<0.5	<0.5	<10
	06/06/02	<50	<50	<0.3	<0.3	<0.5	<0.5	14	<0.5	<0.5	<0.5	<10
	09/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	16	<0.5	<0.5	<0.5	<10
	12/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	28	<0.5	<0.5	1.1	<10
	03/12/03	<50	140	<1.5	<1.5	<2.5	<2.5	12	<2.5	<2.5	<2.5	<50
	06/12/03	<50	<50	<1.0	<1.0	<1.0	<1.0	6.9	<1.0	<1.0	<1.0	<25
	10/29/03	<50	<50	<1.0	<1.0	<1.0	<1.0	11	<1.0	<1.0	<1.0	<25
	08/23/04	NA	NA	1.2	1.2	<1.0	<1.0	13	<1.0	<1.0	<1.0	<25
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	8.6	<1.0	<1.0	<1.0	<25

\*\*

Results in the gasoline organics range are primarily due to a single unknown peak.

**Table 3: Groundwater Groundwater Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA
		ug/L										
MW-8	09/05/00	<50	<50	<0.3	<0.3	<0.5	<0.5	11	<0.5	<0.5	<0.5	<5.0
	12/26/00	<50	<50	<0.3	<0.3	<0.5	<0.5	4.3	<0.5	<0.5	<0.5	<10
	03/20/01	<50	<50	<0.3	<0.3	<0.5	<0.5	4.1	<0.5	<0.5	<0.5	<10
	06/06/01	ND	ND	ND	ND	ND	ND	3.1	ND	ND	ND	ND
	09/06/01	<50	<50	<0.3	<0.3	<0.5	<0.5	3.0	<0.5	<0.5	<0.5	<10
	12/07/01	<50	<50	<0.3	<0.3	<0.5	<0.5	5.0	<0.5	<0.5	<0.5	<10
	03/07/02	<50	110	<0.3	<0.3	<0.5	<0.5	4.1	<0.5	<0.5	<0.5	<10
	06/06/02	<50	<50	<0.3	<0.3	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	<10
	09/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	2.0	<0.5	<0.5	<0.5	<10
	12/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	1.9	<0.5	<0.5	<0.5	<10
	03/12/03	<50	<50	<0.3	<0.3	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<10
	06/12/03	<50	<50	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<25
	10/29/03	<50	<50	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<25
MW-9	09/05/00	<50	<50	<3,000	<3,000	<5,000	<5,000	8,600	<5,000	<5,000	<5,000	<50,000
	12/26/00	<50	<50	<0.3	<0.3	<0.5	<0.5	7,100	2.2	<0.5	16	60
	03/20/01	<50	<50	<15	<15	<25	<25	570	<25	<25	<25	<500
	06/06/01	ND	ND	ND	ND	ND	ND	570	ND	ND	2.2	ND
	09/05/01	<50	<50	<0.3	<0.3	<0.5	<0.5	1,700	2.5	<0.5	3.8	<10
	12/07/01	<50	<50	<0.3	<0.3	<0.5	<0.5	1,300	1.3	<0.5	3.4	11
	03/07/02	<50	<50	<0.3	<0.3	<0.5	<0.5	96	13	<0.5	0.61	<10
	06/06/02	<50	<50	<0.3	<0.3	<0.5	<0.5	1,000	19	<0.5	2.6	<10
	09/11/02	<50	120*	<3.0	<3.0	<5.0	<5.0	5,100	21	<5.0	11	<100
	12/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	3,100	6.5	<0.5	4.8	<10
	03/12/03	<50	<50	<1.5	<1.5	<2.5	<2.5	170	9.7	<2.5	<2.5	<50
	06/12/03	77**	<50	<10	1.0	<1.0	<1.0	56	1.7	<1.0	<1.0	<25
	11/03/03	810**	<50	<5.0	8.2	<5.0	7.3	790	7.9	<5.0	<5.0	<100
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	830	1.2	<1.0	3.6	820

\*

The sample chromatogram contains three peaks in the diesel range whose pattern and retention times match those previously identified by GCMS as di-basic esters used in plasticizers.

\*\*

Result consists primarily of MTBE and/or TBA.

**Table 3: Groundwater Groundwater Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA
		ug/L										
MW-10	09/05/00	<50	100	<30	<30	<50	<50	500	<50	<50	<50	<500
	12/26/00	<50	<50	<0.3	<0.3	<0.5	<0.5	490	<0.5	<0.5	1.2	14
	03/20/01	<50	<50	<0.3	<0.3	<0.5	<0.5	96	<0.5	<0.5	<0.5	<10
	06/06/01	ND	ND	ND	0.37	ND	0.56	92	ND	ND	ND	ND
	09/05/01	<50	<50	<0.3	<0.3	<0.5	<0.5	360	<0.5	<0.5	<0.5	<10
	12/07/01*	<50	<50	<15	<15	<25	<25	450	<25	<25	<25	<500
	03/07/02	<50	<50	<0.3	<0.3	<0.5	<0.5	700	<0.5	<0.5	1.4	<10
	06/06/02	<50	<50	<0.3	<0.3	<0.5	<0.5	880	<0.5	<0.5	1.2	<10
	09/11/02	<50	<51 <sup>1</sup>	<3.0	<3.0	<5.0	<5.0	530	<5.0	<5.0	<5.0	<100
	12/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	1,700	<0.5	<0.5	1.4	<10
	03/12/03	<50	<50	<30	<30	<50	<50	1,700	<50	<50	<50	<1,000
	06/12/03	980**	<50	<10	<10	<10	<10	980	<10	<10	<10	<250
	10/29/03	760**	<50	<10	<10	<10	<10	760	<10	<10	<10	<250
MW-11	09/05/00	64	<50	17	<0.3	2.9	1.6	3.5	<0.5	,0.5	<0.5	<50
	12/26/00	<50	<50	<0.3	<0.3	<0.5	<0.5	3.9	<0.5	<0.5	<0.5	<10
	03/20/01	<50	<50	<0.3	<0.3	1.1	1.8	<0.5	<0.5	<0.5	<0.5	<10
	06/06/01	ND	ND	ND	0.81	0.56	1.5	1.3	ND	ND	ND	ND
	09/06/01	460	<50	94	<0.3	6.2	<0.5	3	<0.5	<0.5	<0.5	<10
	01/09/02	Well inaccessible										
	03/08/02	<50	<50	<0.3	<0.3	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<10
	06/12/02	<50	<50	<0.3	<0.3	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<10
	09/11/02	430	<50	3.6	<3.0	15	32	<5.0	<5.0	<5.0	<5.0	<100
	12/10/02	230	<50	<0.3	<0.3	0.51	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	03/11/03	<50	<50	<0.3	<0.3	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	<10
	06/12/03	<50	<50	1.3	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	11/03/03	83	<50	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<25

\*

Elevated detection limits in 8260B analysis due to matrix interference.

1

According to the laboratory, the target compounds are not present. The sample chromatograms do not resemble those used for fuel standards. The laboratory has subsequently identified the compounds present as di-basic esters, common components of plasticizers present at 510 ug/L.

\*\*

Result consists primarily of MTBE and/or TBA.

**Table 3: Groundwater Groundwater Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA
		ug/L										
MW-12	09/05/00	<50	<50	<0.3	<0.3	0.99	1.8	0.59	<0.5	<0.5	<0.5	<5.0
	12/26/00	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	03/20/01	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/06/01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/06/01	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	01/09/02	<50	<50	<0.3	0.56	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	03/08/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/12/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	09/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	12/10/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	03/11/03	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/12/03	<50	<50	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	11/03/03	<50	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
MW-13	09/05/00	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
	12/26/00	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	03/20/01	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/06/01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/06/01	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	01/09/02	Well inaccessible										
	03/08/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/12/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	09/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	12/10/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	03/11/03	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/12/03	<50	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	11/03/03	<50	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25

\*

The sample chromatogram contains three peaks in the diesel range whose pattern and retention times match those previously identified by GCMS as di-basic esters used in plasticizers (sample also contains approximately 300 ug/L TPH-d).

\*\*

Result consists primarily of MTBE and or/TBA.

**Table 3: Groundwater Groundwater Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA
		ug/L										
MW-14	09/05/00	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
	12/26/00	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	03/20/01	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/05/01	ND	59	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/05/01	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	12/07/01	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	03/07/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/06/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	09/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	12/12/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	03/12/03	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/12/03	<50	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	11/03/03	<50	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
MW-15	09/05/00	<50	<50	<0.3	<0.3	<0.5	<0.5	460	<0.5	<0.5	0.84	31
	12/26/00	<50	<50	<15	<15	<25	<25	480	<25	<25	<25	<500
	03/20/01	<50	<50	<0.3	<0.3	<0.5	<0.5	630	<0.5	<0.5	2.8	22
	06/05/01	ND	ND	ND	ND	ND	ND	1,300	ND	ND	2.3	ND
	09/05/01	<50	<50	<0.3	<0.3	<0.5	<0.5	800	<0.5	<0.5	1.4	<10
	12/07/01	<50	<50	<0.3	<0.3	<0.5	<0.5	540	<0.5	<0.5	0.99	<10
	03/07/02	<50	<50	<0.3	<0.3	<0.5	<0.5	1,100	<0.5	<0.5	2.7	<10
	06/06/02	<50	<50	<0.3	<0.3	<0.5	<0.5	1,500	<0.5	<0.5	1.9	<10
	09/11/02	<50	880*	<0.3	<0.3	<0.5	<0.5	780	<0.5	<0.5	1.2	<10
	12/12/02	<50	<50	<0.3	<0.3	<0.5	<0.5	640	<0.5	<0.5	<0.5	<10
	03/12/03	<50	140	<30	<30	<50	<50	970	<50	<50	<50	<1,000
	06/13/03	570**	<50	<10	<10	<10	<10	570	<10	<10	<10	<250
	11/03/03	410**	<50	<5.0	<5.0	<5.0	<5.0	410	<5.0	<5.0	<5.0	<100
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	570	<1.0	<1.0	<1.0	<25

\*

The sample chromatogram contains three peaks in the diesel range whose pattern and retention times match those previously identified by GCMS as di-basic esters used in plasticizers (sample also contains approximately 300 ug/L TPH-d).

\*\*

Result consists primarily of MTBE and or/TBA.

**Table 3: Groundwater Groundwater Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA
		ug/L										
MW-16D	06/06/01	ND	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND
	09/05/01	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	12/07/01	<50	<50	<0.3	<0.3	<0.5	0.52	<0.5	<0.5	<0.5	<0.5	<10
	03/07/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/06/02	<50	1000	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	09/11/02	56*	<51 <sup>1</sup>	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	12/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	03/12/03	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/13/03	<50	<50	1.3	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	10/29/03	<50	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
MW-17D	06/05/01	860	86	2.6	3	3.2	7.1	26	ND	ND	ND	ND
	09/05/01	<50	<50	<0.3	<0.3	<0.5	<0.5	23	<0.5	<0.5	<0.5	<10
	12/07/01	270	70	4.1	2.1	5.1	13	8.4	<0.5	<0.5	<0.5	<10
	03/07/02	230	68	3.2	4.8	4.7	8.9	9.1	<0.5	<0.5	<0.5	<10
	06/05/02	<50	<50	1.6	0.73	0.89	2.3	5.9	<0.5	<0.5	<0.5	<10
	09/10/02	87	71	1.3	0.72	0.56	1.3	3.8	<0.5	<0.5	<0.5	<10
	12/12/02	<50	<50	1.1	0.38	<0.5	<0.5	4.3	<0.5	<0.5	<0.5	<10
	03/12/03	50	73	0.78	<0.6	<1.0	<1.0	3.2	<1.0	<1.0	<1.0	<20
	06/13/03	<50	<50	1.1**	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<25
	11/03/03	<50	<50	<1.0	1.8	<1.0	2	1.8	<1.0	<1.0	<1.0	<25

\* Sample does not display a fuel pattern. Sample contains several discreet peaks.

1 According to the laboratory, the target compounds are not present. The sample chromatograms do not resemble those used for fuel standards. The laboratory has subsequently identified the compounds present as di-basic esters, common components of plasticizers, present at a concentration of 590 µg/L.

\*\* 5.4 µg/L tetrahydrofuran (a primary constituent of PVC glue) was also identified.

\*\*\* The THP. gasoline result consists primarily of MTBE and/or TBA.

2 According to the laboratory, the target compounds are not present. The sample chromatograms do not resemble those used for fuel standards. The laboratory has subsequently identified the compounds present as di-basic esters, common components of plasticizers, present at a concentration of 480 µg/L.

**Table 3: Groundwater Groundwater Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA
		ug/L										
MW-18D	06/05/01	ND	ND	1.2	1.3	1	1.7	190	ND	ND	ND	ND
	09/05/01	<50	<50	0.53	<0.3	<0.5	<0.5	110	<0.5	<0.5	<0.5	<10
	12/07/01	<50	68	0.3	<0.3	0.58	0.99	120	<0.5	<0.5	<0.5	<10
	03/07/02	<50	<50	<0.3	0.62	0.62	0.84	160	<0.5	<0.5	<0.5	<10
	06/05/02	<50	<50	<0.3	<0.3	<0.5	<0.5	270	<0.5	<0.5	<0.5	<10
	09/10/02	<50	<50 <sup>2</sup>	<0.3	<0.3	<0.5	<0.5	260	<0.5	<0.5	<0.5	<10
	12/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	380	<0.5	<0.5	<0.5	<10
	03/12/03	<50	<50	<0.3	<0.3	<0.5	<0.5	160	<0.5	<0.5	<0.5	<10
	06/13/03	<50	<50	1.3	1.1	<1.0	<1.0	15	<1.0	<1.0	<1.0	<25
	11/03/03	53***	<50	<1.0	<1.0	<1.0	<1.0	53	<1.0	<1.0	<1.0	<25
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	12	<1.0	<1.0	<1.0	<25
MW-19	06/06/01	ND	ND	ND	ND	ND	ND	44	ND	ND	ND	ND
	09/05/01	Access obstructed by property owner										
	12/07/01	Access obstructed by property owner										
	03/07/02	Access obstructed by property owner										
	04/04/02	<50	<50	<0.3	<0.3	<0.5	<0.5	4.0	<0.5	<0.5	<0.5	<10
	06/12/02	<50	<50	<0.3	<0.3	<0.5	<0.5	14	<0.5	<0.5	<0.5	<10
	09/11/02	110**	<50 <sup>1</sup>	<0.3	<0.3	<0.5	<0.5	1,300	<0.5	<0.5	110	190
	12/10/02	<50	<50	<0.3	<0.3	<0.5	<0.5	180	<0.5	<0.5	11	<10
	03/11/03	<50	<50	<0.3	<0.3	<0.5	<0.5	25	<0.5	<0.5	2.0	<10
	06/13/03	<50	<50	<1.0	1.0	<1.0	<1.0	14	<1.0	<1.0	<1.0	<25
	10/31/03	2200	<50	<10	<10	<10	<10	1,200	<10	<10	<10	980
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	11	<1.0	<1.0	<1.0	<25

\* Sample does not display a fuel pattern. Sample contains several discreet peaks.

1 According to the laboratory, the target compounds are not present. The sample chromatograms do not resemble those used for fuel standards.

The laboratory has subsequently identified the compounds present as di-basic esters, common components of plasticizers, present at a concentration of 590 µg/L.

\*\* 5.4 µg/L tetrahydrofuran (a primary constituent of PVC glue) was also identified.

\*\*\* The TPH gasoline result consists primarily of MTBE and/or TBA.

2 According to the laboratory, the target compounds are not present. The sample chromatograms do not resemble those used for fuel standards.

The laboratory has subsequently identified the compounds present as di-basic esters, common components of plasticizers (480 ug/L)

**Table 3: Groundwater Groundwater Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA
		ug/L										
MW-20	06/05/01	ND	ND	ND	ND	ND	ND	9.4	ND	ND	ND	ND
	09/05/01	<50	<50	<0.3	<0.3	<0.5	<0.5	11	<0.5	<0.5	<0.5	<10
	12/07/01	<50	<50	<0.3	0.3	<0.5	0.69	4.8	<0.5	<0.5	<0.5	<10
	03/07/02	<50	<50	<0.3	0.3	<0.5	<0.5	6.9	<0.5	<0.5	<0.5	<10
	06/06/02	<50	<50	<0.3	<0.3	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<10
	09/11/02	<50	<502	<0.3	<0.3	<0.5	<0.5	0.95	<0.5	<0.5	<0.5	<10
	12/12/02	<50	<50	<0.3	<0.3	<0.5	<0.5	0.73	<0.5	<0.5	<0.5	<10
	03/12/03	<50	58	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/13/03	<50	<50	1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	11/03/03	<50	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	08/23/04	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
MW-21	06/05/01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/05/01	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	12/07/01	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	03/07/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/06/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	09/11/02	<50	53	<0.3	<0.3	<0.5	<0.5	0.69	<0.5	<0.5	<0.5	<10
	12/12/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	03/12/03	<50	<50	<0.3	<0.3	<0.5	<0.5	2.0	<0.5	<0.5	<0.5	<10
	06/13/03	<50	<50	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<25
	11/03/03	<50	<50	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<25

1 According to the laboratory, the target compounds are not present. The sample chromatograms do not resemble those used for fuel standards. The laboratory has subsequently identified the compounds present as di-basic esters, common components of plasticizers, present at a concentration of 260 µg/L.

\*\* Results in the gasoline organics range are primarily due to a single unknown peak

2 According to the laboratory, the target compounds are not present. The sample chromatograms do not resemble those used for fuel standards. The laboratory has subsequently identified the compounds present as di-basic esters, common components of plasticizers, present at a concentration of 2,300 µg/L.

**Table 3: Groundwater Groundwater Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA
		ug/L										
MW-22	06/05/01	ND	83	1.2	0.77	0.62	0.85	1,800	2.5	ND	3.3	ND
	09/05/01	<50	<50	<0.3	<0.3	<0.5	<0.5	770	13	<0.5	1.6	<10
	12/07/01	<50	<50	<0.3	<0.3	<0.5	<0.5	2,000	<50	<50	<50	<1,000**
	03/06/02	<50	83	<0.5	0.41	<0.5	<0.5	260	3.4	<0.5	0.51	<10
	06/05/02	<50	<50	<0.3	<0.3	<0.5	<0.5	570	4.6	<0.5	0.96	<10
	09/10/02	<50	90	<0.3	<0.3	<0.5	<0.5	730	12	<0.5	1.3	<10
	12/12/02	<50	<50	<0.3	<0.3	<0.5	<0.5	790	6.8	<0.5	2.1	<10
	03/12/03	<50	<50	<0.3	<0.3	<0.5	<0.5	11	0.84	<0.5	<0.5	<10
	06/13/03	120***	<50	<2.0	<2.0	<2.0	<2.0	120	<2.0	<2.0	<2.0	<50
	11/03/03	170***	<50	<2.0	<2.0	<2.0	<2.0	170	3.6	<2.0	<2.0	<50
	08/23/04	NA	NA	<2.0	<2.0	<2.0	<2.0	1,100	<2.0	<2.0	2.9	65
	12/22/04	NA	NA	<10	<10	<10	<10	430	<10	<10	<10	<250
MW-23	06/06/01	ND	ND	ND	ND	ND	ND	130	ND	ND	ND	ND
	09/06/01	<50	<50	<0.3	<0.3	<0.5	<0.5	160	<0.5	<0.5	<0.5	<10
	12/07/01*	<50	51	<6.0	<6.0	<10	<10	150	<10	<10	<10	<200
	03/08/02	<50	63	<0.3	0.4	<0.5	<0.5	38	<0.5	<0.5	1.3	<10
	06/06/02	<50	74	<0.3	<0.3	<0.5	<0.5	160	<0.5	<0.5	2.5	<10
	09/11/02	<50	85**	<0.3	<0.3	<0.5	<0.5	130	<0.5	<0.5	0.63	<10
	12/11/02	<50	<50	<0.3	<0.3	<0.5	<0.5	100	<0.5	<0.5	<0.5	<10
	03/12/03	<50	<50	<3.0	<3.0	<5.0	<5.0	350	<5.0	<5.0	18	130
	06/13/03	330***	<50	<5.0	<5.0	<5.0	<5.0	310	<5.0	<5.0	15	<100
	10/31/03	210***	<50	<2.0	3.0	<2.0	<2.0	200	<2.0	<2.0	6.8	<50

\* Elevated detection limits for 8260B analysis due to matrix interference.

\*\* Results in the diesel organics range are primarily due overlap from a heavy oil range product.

\*\*\* Result consists primarily of MTBE and/or TBA.

1 According to the laboratory, the target compounds are not present. The sample chromatograms do not resemble those used for fuel standards. The laboratory has subsequently identified the compounds present as di-basic esters, common components of plasticizers, present at a concentration of 480 µg/L.

**Table 3: Groundwater Groundwater Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA
		ug/L										
MW-24D*	06/06/01	1,800	58	1.3	1.4	0.91	3.2	1.9	ND	ND	ND	ND
	09/05/01	Access obstructed by property owner										
	12/07/01	Access obstructed by property owner										
	03/07/02	Access obstructed by property owner										
	04/04/02	<50	<50	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	06/12/02	<50	<50	<0.3	<0.3	<0.5	<0.5	2.3	<0.5	<0.5	<0.5	<10
	09/11/02	<50	<511	<0.3	<0.3	<0.5	<0.5	1.9	<0.5	<0.5	<0.5	<10
	12/10/02	<50	54	<0.3	<0.3	<0.5	<0.5	1.9	<0.5	<0.5	<0.5	<10
	03/11/03	<50	<50	<0.3	<0.3	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<10
	06/13/03	<50	<50	1.4	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
MW-25D	10/31/03	<50	<50	<1.0	<1.0	<1.0	<1.0	3.1	<1.0	<1.0	<1.0	<25
	11/03/03	<50	<50	<1.0	1.1	<1.0	<1.0	2.3	<1.0	<1.0	<1.0	<25
	08/23/04	NA	NA	<1.0	<1.0	<1.0	<1.0	4.0	<1.0	<1.0	<1.0	<25
MW-26D	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<25
	10/29/03	<50	<50	<1.0	<1.0	<1.0	<1.0	12.0	<1.0	<1.0	<1.0	<25
	08/23/04	NA	NA	1.8	1.7	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	<25
MW-27	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	10/29/03	70*	<50	<1.0	1.4	<1.0	<1.0	66	<1.0	<1.0	2.0	<25
	08/23/04	NA	NA	<1.0	<1.0	<1.0	<1.0	230	<1.0	<1.0	2.6	35
	12/22/04	NA	NA	<2.0	<2.0	<2.0	<2.0	41	<2.0	<2.0	<2.0	<50

\*

MW-24D was originally designated MW-15D.

**Table 3: Groundwater Groundwater Analytical Results**  
**365 Todd Road, Santa Rosa, California**

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA
		ug/L										
MW-28	10/28/03	<50	<50	<1.0	<1.0	<1.0	<1.0	3.6	<1.0	<1.0	<1.0	<25
	08/24/04	NA	NA	<1.0	<1.0	<1.0	<1.0	2.3	<1.0	<1.0	<1.0	<25
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
MW-29D	10/28/03	<50	<50	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	08/24/04	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
MW-30	10/31/03	<50	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	08/23/04	NA	NA	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	<25
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<25
MW-31D	10/31/03	<50	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	08/23/04	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	12/22/04	NA	NA	5.0	1.3	1.2	1.5	<1.0	<1.0	<1.0	<1.0	<25
MW-32	10/29/03	90*	<50	<1.0	<1.0	<1.0	<1.0	85	<1.0	<1.0	3.3	<25
	08/23/04	NA	NA	1.4	1.2	<1.0	<1.0	110	<1.0	<1.0	<3.2	<25
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	90	<1.0	<1.0	2.2	<25
MW-33	10/29/03	<50	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	08/23/04	NA	NA	2.4	2.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
MW-34	11/03/03	<50	<50	<1.0	1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<25
	08/23/04	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
MW-35D	11/03/03	<50	<50	<1.0	2.1	<1.0	1.2	1.9**	<1.0	<1.0	<1.0	<25
	08/23/04	NA	NA	<1.0	<1.0	<1.0	<1.0	3.1	<1.0	<1.0	<1.0	<25
	12/22/04	NA	NA	<1.0	<1.0	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	<25

\* TPH-g result consists primarily of MTBE and/or TBA.

\*\* Tetrahydrofuran (THF) was detected.

**APPENDIX A**

**WELL PURGE RECORDS**































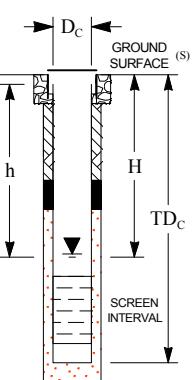
SCS ENGINEERS

## WELL PURGE RECORD

2004 - 4th Quarter

WELL NUMBER

MW-33

PROJECT J. E. McCaffrey Co.		JOB NUMBER 01203335.00	SITE 365 Todd Road	RECORDED BY J. Greenlee / A. Yardley							
<p>PURGING METHOD      SAMPLING METHOD</p> <p>HAND PUMP              _____          SUBMERSIBLE PUMP    <input checked="" type="checkbox"/>      _____          BAILER                  _____          OTHER                   _____</p>		<b>PURGING CRITERIA</b> Minimum of 3 wetted casing volumes (or 5 gallons minimum for 2" dia. wells), until water parameters (pH, temp., cond.) have stabilized ( $\pm 10\%$ ), or until dry. <b>REMARKS</b> * Oil/water interface probe used to check for NAPLs. MLE = Meter Limit Exceeded (<999 ntu's).									
CASING DIAMETER ( $D_c$ ): <u>2.0</u> DEPTH TO: WATER (h): <u>11.20</u>  NAPL: <u>n.a.*</u> -0.41 NAPL THICKNESS: <u>n.a.*</u> SCREEN DEPTH: TOP: <u>10.0</u> BOTTOM: <u>20.0</u> TOTAL DEPTH ( $TD_c$ ): <u>20.00</u> Diameters in (inches) : Depths in (feet) ONE CASING VOLUME: $[TD_c - H] [3.14 (D_c / 2)^2] [7.48 \text{ gal/ft}^3]$ : <u>1.37</u> gallons		DATE OF SAMPLING: <u>12/22/2004</u> WEATHER: <u>Clear</u> TAGGED WATER LEVELS FROM TOC: <u>11.2 / 11.2</u> TAGGED WELL DEPTH FROM TOC: <u>19.77</u> PURGE VOLUME (3 CASING VOLUMES): <u>4.1</u> gallons DEPTH TO WATER FOR 80% RECHARGE: <u>12.88</u> ft. below TOC TIME OF SAMPLING: <u>12:45</u> DEPTH TO WATER AT TIME OF SAMPLING: <u>10.66</u> ft. below TOC APPEARANCE OF SAMPLE: <u>Clear</u> LABORATORY: <u>Analytical Sciences</u> SEE CHAIN OF CUSTODY FORM FOR ANALYTICAL INFORMATION.									
PURGING DATA			CUMULATIVE TOTAL REMOVED		WATER CHARACTERISTICS					COMMENTS	
DATE	TIME		WATER REMOVED (GAL)	GAL	CASING VOLUMES	pH	CONDUCTIVITY (mmhos/cm)	TURBIDITY (NTU)	TEMPERATURE (°C)		DISSOLVED OXYGEN (ppm)
	BEGIN	FINISH									
12/22/04	11:24	11:25	1	1	0.73	7.40	0.486	*MLE	16.5	5.00	
12/22/04	11:25	11:26	2	3	2.19	6.64	0.661	782	17.4	1.13	
12/22/04	11:26	11:27	2	5	3.65	6.78	0.672	642	18.2	1.33	





**APPENDIX B**

**LABORATORY ANALYTICAL REPORTS**



Report Date: January 11, 2005

Stephen Knüttel  
SCS Engineers  
3645 Westwind Blvd.  
Santa Rosa, CA 95403

## LABORATORY REPORT

Project Name: **JE McCaffrey**      **01203335.00**

Lab Project Number: **4122306**

This 21 page report of analytical data has been reviewed and approved for release.

Mark A. Valentini, Ph.D.  
Laboratory Director



## Volatile Hydrocarbons by GC/MS in Water

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27325	MW- 32	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	90	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	2.2	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.6	103	70 – 130
Toluene-d <sub>8</sub> (20)	19.9	99.5	70 – 130
4-bromofluorobenzene (20)	19.8	99.0	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/29/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27326	<b>MW- 33</b>	<b>benzene</b>	ND	1.0
		<b>toluene</b>	ND	1.0
		<b>ethyl benzene</b>	ND	1.0
		<b>m,p-xylene</b>	ND	1.0
		<b>o-xylene</b>	ND	1.0

#### Oxygenated Gasoline Additives

<b>tert-butyl alcohol (TBA)</b>	ND	25
<b>Methyl tert-butyl ether (MTBE)</b>	ND	1.0
<b>di-isopropyl ether (DIPE)</b>	ND	1.0
<b>ethyl tert-butyl ether (ETBE)</b>	ND	1.0
<b>tert-amyl methyl ether (TAME)</b>	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	20.2	101	70 – 130
4-bromofluorobenzene (20)	19.4	97.0	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/29/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27327	MW- 7	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
Methyl tert-butyl ether (MTBE)	8.6	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.3	102	70 – 130
Toluene-d <sub>8</sub> (20)	20.0	100	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/29/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27328	<b>MW- 19</b>	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
<b>methyl tert-butyl ether (MTBE)</b>	<b>11</b>	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.7	104	70 – 130
Toluene-d <sub>8</sub> (20)	20.2	101	70 – 130
4-bromofluorobenzene (20)	19.8	99.0	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/19/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27329	<b>MW- 30</b>	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
<b>methyl tert-butyl ether (MTBE)</b>	<b>1.4</b>	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	19.9	99.5	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/29/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27330	MW- 31D	benzene	5.0	1.0
		Toluene	1.3	1.0
		ethyl benzene	1.2	1.0
		m,p-xylene	1.5	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.3	102	70 – 130
Toluene-d <sub>8</sub> (20)	20.0	100	70 – 130
4-bromofluorobenzene (20)	19.3	96.5	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/29/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27331	<b>MW- 28</b>	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.6	103	70 – 130
toluene-d <sub>8</sub> (20)	20.0	100	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/29/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27332	MW- 29D	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.6	103	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	19.4	97.0	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/29/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27335	<b>MW-34</b>	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	20.0	100	70 – 130
4-bromofluorobenzene (20)	19.9	99.5	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/29/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27336	MW-35D	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	1.8 (1)	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.6	103	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	19.7	98.5	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/29/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	

**(1)** The following additional compound was observed: Tetrahydrofuran (19 ug/L). Tetrahydrofuran is the primary ingredient in PVC pipe glue and may not represent a persistent contaminant.



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27337	MW-22	benzene	ND	10
		toluene	ND	10
		ethyl benzene	ND	10
		m,p-xylene	ND	10
		o-xylene	ND	10

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	250
methyl tert-butyl ether (MTBE)	430	10
di-isopropyl ether (DIPE)	ND	10
ethyl tert-butyl ether (ETBE)	ND	10
tert-amyl methyl ether (TAME)	ND	10

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	19.9	99.5	70 – 130
4-bromofluorobenzene (20)	19.5	97.5	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/30/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27338	<b>MW-20</b>	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.6	103	70 – 130
toluene-d <sub>8</sub> (20)	20.2	101	70 – 130
4-bromofluorobenzene (20)	19.5	97.5	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/29/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27339	MW-18D	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	12	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

Date Sampled: 12/22/04	Date Analyzed:	QC Batch #: _____
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27340	<b>MW-15</b>	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
<b>methyl tert-butyl ether (MTBE)</b>	<b>570</b>	5.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	19.8	99.0	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/30/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27341	MW-25D	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	1.6	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	20.0	100	70 – 130
4-bromofluorobenzene (20)	19.8	99.0	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/30/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27342	MW-9	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	820	25
methyl tert-butyl ether (MTBE)	830	10
di-isopropyl ether (DIPE)	1.2	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	3.6	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.3	102	70 – 130
toluene-d <sub>8</sub> (20)	20.0	100	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/30/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27343	MW-26D	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.6	103	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	19.5	97.5	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/30/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27344	MW-27	benzene	ND	2.0
		toluene	ND	2.0
		ethyl benzene	ND	2.0
		m,p-xylene	ND	2.0
		o-xylene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	41	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.6	103	70 – 130
toluene-d <sub>8</sub> (20)	19.9	99.5	70 – 130
4-bromofluorobenzene (20)	19.7	98.5	70 – 130

Date Sampled: 12/22/04	Date Analyzed: 12/30/04	QC Batch #: 5179
Date Received: 12/23/04	Method: EPA 8260B	



# LABORATORY QUALITY ASSURANCE REPORT

QC Batch #: 5179

Lab Project #: 4122306

Sample ID	Compound Name	Result (ug/L)
MB	1,1-dichloroethene	ND
MB	Benzene	ND
MB	Trichloroethene	ND
MB	Toluene	ND
MB	Chlorobenzene	ND

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.2	101	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	19.9	99.5	70 – 130

Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.
27330	CMS	1,1-dichloroethene	23.4	25.0	93.6
	CMS	Benzene	24.4	25.0	97.6
	CMS	Trichloroethene	21.5	25.0	86.0
	CMS	Toluene	24.1	25.0	96.4
	CMS	Chlorobenzene	25.0	25.0	100

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.3	102	70 – 130
toluene-d <sub>8</sub> (20)	19.7	98.2	70 – 130
4-bromofluorobenzene (20)	19.3	96.5	70 – 130



Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.	RPD
27330	CMSD	1,1-dichloroethene	23.8	25.0	95.2	1.7
	CMSD	benzene	25.0	25.0	100	2.4
	CMSD	trichloroethene	21.8	25.0	87.2	1.4
	CMSD	toluene	24.5	25.0	98.0	1.2
	CMSD	chlorobenzene	25.2	25.0	101	0.80

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	19.9	99.5	70 – 130
4-bromofluorobenzene (20)	19.4	97.0	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



# Analytical Sciences

Analytical Sciences  
P.O. Box 750336, Petaluma, CA 94975-0336  
110 Liberty Street, Petaluma, CA 94952  
(707) 769-3128

## CHAIN OF CUSTODY

LAB PROJECT NUMBER: 9122306

SCS ENGINEERS PROJECT NAME: McCaffrey

SCS ENGINEERS PROJECT NUMBER: 0203335.00

CLIENT INFORMATION		BILLING INFORMATION	
COMPANY NAME: SCS ENGINEERS	CONTACT: Jim McCaffrey		
ADDRESS: 3645 WESTWIND BOULEVARD	COMPANY NAME: JE McCaffrey Co		
SANTA ROSA, CA 95403	ADDRESS: 365 Todd Road		
CONTACT: STEPHEN K. JUVILLE	SANTA ROSA, CA		
PHONE#: (707) 546-9461	PHONE#: 769-4412		
FAX #: (707) 544-5769	FAX #:		

TURNAROUND TIME (check one)			
MOBILE LAB	SAME DAY	24 HOURS	
	48 HOURS	72 HOURS	
	5 DAYS	NORMAL	X
			COC

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	# CONT.	PRESV. YES/NO	ANALYSIS		PAGE ____ OF ____
							TOTAL LEAD	LAB SAMPLE #	
1	MW-34	1/1/93	9:39	LQ	3	Y			15
2	MW-350	1/1/93	2:00	LQ	3	Y			8260
3	MW-32	1/1/93	9:45	LQ	3	Y			6419
4	MW-20	1/1/93	10:00	LQ	3	Y			
5	MW-180	1/1/93	1:05	LQ	3	Y			
6	MW-22	1/1/93	9:45	HQ	3	Y			
7	MW-15	1/1/93	10:35	LQ	3	Y			
8	MW-250	1/1/93	1:55			Y			
9	MW-9	1/1/93	10:50			Y			
10	MW-240	1/1/93	1:45			Y			
11	MW-37	1/1/93	11:05			Y			

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY LABORATORY:	DATE:	TIME:
			J. Palos		
RELINQUISHED BY:	DATE:	TIME:			
RECEIVED BY:	DATE:	TIME:			

12/23/94 10:22

TIME

## SIGNATURES



# Analytical Sciences

## CHAIN OF CUSTODY

Analytical Sciences  
P.O. Box 750336, Petaluma, CA 94975-0336  
110 Liberty Street, Petaluma, CA 94952  
(707) 769-3128

CLIENT INFORMATION		BILLING INFORMATION	
COMPANY NAME: SCS ENGINEERS	CONTACT: Jim McCaffery		
ADDRESS: 3645 WESTWIND BOULEVARD	COMPANY NAME: JE McCaffery Co		
SANTA ROSA, CA 95403	ADDRESS: 365 Todd Road		
CONTACT: STEPHEN YANITI			
PHONE#: (707) 546-9461	SANTA ROSA, CA		
FAX #: (707) 544-5769	PHONE#: 769-4412		
	FAX #:		

LAB PROJECT NUMBER:	4/22306
SCS ENGINEERS PROJECT NAME:	JE McCaffery
SCS ENGINEERS PROJECT NUMBER:	C203335.00
TURNAROUND TIME (check one)	
MOBILE LAB	
SAME DAY	24 HOURS
48 HOURS	72 HOURS
5 DAYS	NORMAL X
COC	

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	#	CONT.	PRESY YES/NO	ANALYSIS		PAGE ____ OF ____
								LAB	COMMENTS	
1	MIA-32	4/22	11:31	L1Q	3	Y				8260
2	MIA-33	4/22	11:45	L1Q	3	Y				
3	MIA-7	4/22	11:55	L1Q	3	Y				
4	MIA-19	4/22	1:45	L1Q	3	Y				
5	MIA-30	4/22	1:30	L1Q	3	Y				
6	MIA-31D	4/22	10:22	L1Q	3	Y				
7	MIA-28	4/22	3:05	L1Q	3	Y				
8	MIA-29D	4/22	1:30	L1Q	3	Y				
9										
10										
11										

RELINQUISHED BY:	DATE::	TIME::	RECEIVED BY LABORATORY:
RECEIVED BY:	DATE::	TIME::	
RELINQUISHED BY:	DATE::	TIME::	
RECEIVED BY:	DATE::	TIME::	

12/23/04 10:22

TIME: DATE: 12/23/04 10:22

SIGNATURE: *K. Pollio*